

California Fish and Game Commission Meeting Binder



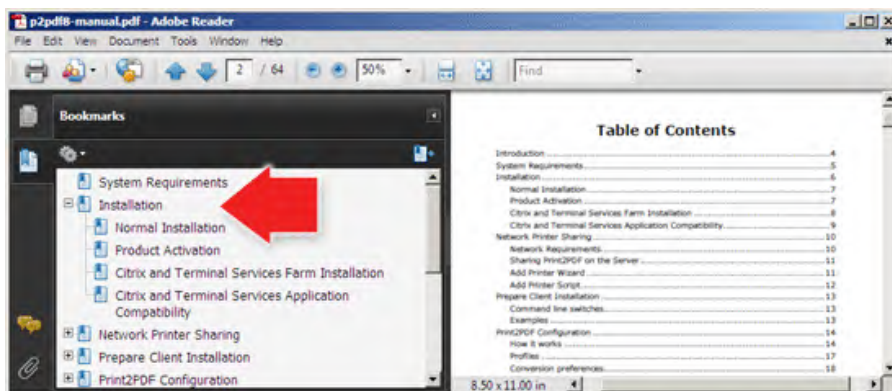
April 16-17, 2025
Sacramento
(Day Two)


EASY GUIDE TO USING THE BINDER

1. Download and open the binder document using your Adobe Acrobat program/app.
2. If a bookmark panel does not automatically appear on either the top or left side of the screen, click/tap on the “bookmark symbol” located near the top left-hand corner.



3. To make adjustments to the view, use the Page Display option in the View tab. You should see something like:



4. We suggest leaving open the bookmark panel to help you move efficiently among the staff summaries and numerous supporting documents in the binder. It's helpful to think of these bookmarks as a table of contents that allows you to go to specific points in the binder without having to scroll through hundreds of pages.
5. You can resize the two panels by placing your cursor in the dark, vertical line  located between the panels and using a long click /tap to move in either direction.
6. You may also adjust the sizing of the documents by adjusting the sizing preferences located on the Page Display icons found in the top toolbar or in the View tab.
7. Upon locating a staff summary for an agenda item, notice that you can obtain more information by clicking/tapping on any item underlined in blue.
8. Return to the staff summary by simply clicking/tapping on the item in the bookmark panel.
9. Do not hesitate to contact staff if you have any questions or would like assistance.

Overview of California Fish and Game Commission Meeting

- Welcome to a meeting of the California Fish and Game Commission. This is the 155th year of operation for the Commission, in partnership with the California Department of Fish and Wildlife. Both organizations originated from the Board of Fish Commissioners in 1870.
- The Commission's goals include preserving our wildlife heritage and conserving our natural resources through informed decision making. These meetings are vital in achieving those goals and, in that spirit, we provide the following information to be as effective and efficient toward that end.
- We are operating under the Bagley-Keene Open Meeting Act and these proceedings are being recorded and broadcast.
- In the unlikely event of an emergency, please note the location of the nearest emergency exits at your location.
- Items may be heard in any order pursuant to the determination of the presiding commissioner, which is President Murray today.
- The amount of time for each agenda item may be adjusted based on time available and the number of speakers.
- If you are here in the in-person location, speaker cards need to be filled out **legibly** and turned in to staff **before** we start the agenda item.
- If you are online or on the phone, you will receive additional instructions in a few minutes.
- We will ask how many speakers we have before taking public comment; please be prepared and listen closely for your name or phone number to be called.
- When you speak, please state your name and any affiliation. Please be respectful and note that disruptions will not be tolerated. Time is precious so please be concise.
- To receive meeting agendas and regulatory notices about those subjects of interest to you, please visit the Commission's website, www.fgc.ca.gov, and sign up for our electronic mailing lists.
- If you want the Commission to consider a regulation change, all petitions for regulation change must be submitted in writing on the authorized form, FGC 1, which is available on the Commission's website or directly from staff.
- For members of the public, if you have access to the Internet and are not planning to make public comment, you may listen to the meeting via our regular webcast by visiting the commission website at www.fgc.ca.gov (link is on right side).
- **Reminder!** Please silence your mobile devices and computers to avoid interruptions.

Introductions for California Fish and Game Commission Meeting

Commission Members

Erika Zavaleta	President (Santa Cruz)
Samantha Murray	Vice President (La Jolla)
Jacque Hostler-Carmesin	Member (McKinleyville)
Eric Sklar	Member (Saint Helena)
Darius W. Anderson	Member (Kenwood)

Commission Staff

Melissa Miller-Henson	Executive Director
David Thesell	Deputy Executive Director
Mike Yaun	Legal Counsel
Susan Ashcraft	Marine Advisor
Ari Cornman	Wildlife Advisor
Dixie Van Allen	Program Manager
Kimi Rogers	Environmental Scientist
Sherrie Fonbuena	Associate Governmental Program Analyst
Jenn Bacon	Associate Governmental Program Analyst
David Haug	Associate Governmental Program Analyst
Kelsey Leaird	Executive Analyst
Jessica Shaw	Seasonal Clerk
Caroline Newell	California Sea Grant State Fellow
Cynthia McKeith	Staff Services Analyst

California Department of Fish and Wildlife Staff

Chuck Bonham	Director
Chad Dibble	Deputy Director, Wildlife and Fisheries Division
Nathaniel Arnold	Deputy Director and Chief, Law Enforcement Division
Josh Grover	Deputy Director, Ecosystem Conservation Division
Sarah Fonseca	Department Tribal Advisor
Scott Gardner	Branch Chief, Wildlife Branch
Jay Rowan	Branch Chief, Fisheries Branch
Craig Shuman	Regional Manager, Marine Region

I would also like to acknowledge special guests who are present:
(i.e., elected officials, including tribal chairpersons, and other special guest

Commissioners
Erika Zavaleta, President

Santa Cruz

Samantha Murray, Vice President
La Jolla

Jacque Hostler-Carmesin, Member
McKinleyville

Eric Sklar, Member
Saint Helena

Darius W. Anderson, Member
Kenwood

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission



*Wildlife Heritage and Conservation
Since 1870*

Melissa A. Miller-Henson
Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov
www.fgc.ca.gov

* **Revised Meeting Agenda** **April 16-17, 2025**

Participate in Person

**Capitol Event Center
1020 – 11th Street
Sacramento, CA 95814**

or

Participate via Zoom/Phone

The meeting will be live streamed; visit <http://www.fgc.ca.gov> the day of the meeting to watch or listen. To provide public comment, please join at the Sacramento location, or via Zoom or phone; join Zoom or directly at <https://us02web.zoom.us/j/87637042947>. For complete instructions on how to join via Zoom or phone, visit fgc.ca.gov/meetings/2025.

This agenda is being revised to:

- Under Item 30B Department Marine Region Report, add an update and discussion of Department director action in the recreational Dungeness crab fishery to prohibit the use of crab traps in Fishing Zone 4 effective at 6:00 p.m. on April 15, 2025; and
- Under Item 12A Central Valley Sport Fishing, consider authorizing notice of sufficiently-related changes to proposed regulation amendments.

- Notes:**
- (1) See important meeting deadlines and procedures, including written public comment deadlines, starting on page 11.
 - (2) A list of reports or other significant documents received by the commission since its February 2025 meeting is on page 7.
 - (3) Unless otherwise indicated, the California Department of Fish and Wildlife is identified as Department.
 - (4) All section and subsection references are to Title 14 of the California Code of Regulations, unless otherwise noted.

Call to Order and Roll Call to Establish a Quorum

1. Consider approving agenda and order of items

General Public Comment

2. General public comment for items not on the agenda

Receive public comment regarding topics within the Commission's authority that are not included on the agenda.

Note: The Commission may not discuss or take action on any matter raised during this item, except to decide whether to place the matter on the agenda of a future meeting (sections 11125 and 11125.7(a), Government Code).

Consent Items

Note: Items on the consent calendar are expected to be routine and non-controversial. After public comment, the Commission will consider approving items on the consent calendar in a single vote without discussion. The presiding commissioner may choose to remove any item from the consent calendar and allow a separate discussion and potential action on that item in response to a request by a Commission member, staff, or an interested person.

3. Initial private lands wildlife habitat enhancement and management area (PLM) plans and licenses

Consider approving initial PLM plans and 2025-2029 licenses for:
(Pursuant to Section 601)

- (A) Merced County
 - I. JG Angus Ranch

4. Five-year PLMs

Consider approving five-year PLM plans and 2025-2029 licenses for:
(Pursuant to Section 601)

- | | |
|------------------------|----------------------------|
| (A) Humboldt County | VI. Seven Springs Ranch |
| I. Big Lagoon | VII. Six Point Ranch |
| II. Klamath | VIII. Summer Camp Ranch |
| III. Rainbow Ridge PLM | (C) Monterey County |
| (B) Mendocino County | I. Bardin Ranch |
| I. Ackerman-South | (D) San Luis Obispo County |
| Daugherty WMA | I. Carnaza Ranch |
| II. Amann Ranch | II. Clark & White Ranch |
| III. Bridges Ranch | III. D Rafter "L" Ranch |
| IV. Carley Ranch | (E) Shasta County |
| V. Pennacchio Ranch | I. Stackhouse Ranch |
| (formerly Christensen | (F) Trinity County |
| Ranch) | I. Stewart Ranch |

5. Annual PLMs

Consider approving annual PLM plans for:
(Pursuant to Section 601)

- (A) Del Norte County
 - I. Smith River PLM
- (B) Humboldt County
 - I. Diamond C Outfitters
 - II. Hunter Ranch
 - III. Redwood House Ranch
 - IV. Stover Ranch
 - V. Wiggins Ranch
- (C) Humboldt and Trinity counties
 - I. Wilkinson Hunting Club
- (D) Kern and San Luis Obispo counties
 - I. Temblor Ranch
- (E) Mendocino County
 - I. Capistran Ranch
 - II. Eden Valley Ranch
 - III. Four Pines Ranch
 - IV. Miller-Eriksen Ranch
 - V. R-R Ranch
 - VI. Shamrock Ranch
 - VII. Spring Valley Ranch
- (F) Merced County
 - I. DeFrancesco / Eaton Ranch
 - II. Stevinson Ranch
- (G) Monterey County
 - I. Alexander Ranch
 - II. Gabilan Ranch
 - III. Hartnell Ranch
 - IV. Indian Valley Cattle Company (IVCC) – Lombardo Ranch
 - V. Peachtree Ranch
 - VI. Sky Rose Ranch
 - VII. Work Ranch
- (H) Monterey and San Benito counties
 - I. Morisoli Ranch
- (I) Monterey and San Luis Obispo counties
 - I. Camp 5 Outfitters - Roth Ranch
- (J) San Benito County
 - I. Lewis Ranch
 - II. Lone Ranch
 - III. Rancho Le Cuesta
 - IV. Trincherio Ranch
- (K) San Joaquin County
 - I. Corral Hollow Ranch
- (L) San Luis Obispo County
 - I. Avenales Ranch
 - II. Carrizo Ranch
 - III. Chimney Rock Ranch
 - IV. Hearst Ranch
- (M) Santa Clara County
 - I. Coon Creek Ranch
- (N) Tehama County
 - I. 3D Ranch
 - II. Bell Ranch
 - III. R Wild Horse Ranch
- (O) Trinity County
 - I. Travis Ranch

6. **Golden mussel emergency regulation**
Consider a 90-day extension of the emergency regulation adding golden mussel (*Limnoperna fortunei*) to the list of animals restricted from live importation, transportation and possession.
(Amend Section 671)

Discussion and Action Items

7. **Commission executive director and Department reports**
(A) ***Commission executive director***
(B) ***Department director and Law Enforcement Division***
8. **Falconry**
Consider authorizing publication of notice of intent to amend falconry regulations.
(Amend sections 670 and 703)
9. **Waterfowl hunting**
Consider adopting proposed amendments to waterfowl hunting regulations and taking final action under the California Environmental Quality Act.
(Amend Section 502)
10. **Big game hunting and chronic wasting disease testing**
Consider adopting proposed amendments to regulations regarding big game hunting and chronic wasting disease testing and taking final action under the California Environmental Quality Act.
(Amend sections 360, 362, 363, 364, 364.1 and 708.5)
11. **White sturgeon sport fishing 2084 regular rulemaking**
Discuss proposed amendments to regulations for the recreational take of, tagging of, and reporting requirements for, white sturgeon (*Acipenser transmontanus*) in inland and ocean waters, pursuant to California Fish and Game Code Section 2084.
(Repeal sections 5.78, 5.79, 27.92, 27.93 and 27.95; and amend sections 1.74, 5.80, 5.81, 27.60, 27.90, 27.91 and 701)
12. **Inland sport fishing**
(A) ***Central Valley (annual)***
Discuss proposed amendments, including considering authorizing staff to provide public notice of Department-requested, sufficiently-related changes to proposed amendments to Central Valley sport fishing regulations.
(Amend subsections 7.40(b)(4), (b)(43), (b)(66) and (b)(80))
(B) ***Klamath River Basin (annual)***
Discuss proposed amendments to Klamath River Basin sport fishing regulations related to Chinook salmon.
(Amend subsection 7.40(b)(50))

13. Morro manzanita

Consider and potentially act on the petition, Department's evaluation report, and comments received to determine whether listing morro manzanita (*Arctostaphylos morroensis*) as endangered under the California Endangered Species Act may be warranted.

(Pursuant to subdivision 2074.2, California Fish and Game Code)

14. Western Joshua Tree Conservation Plan

Receive a summary of initial comments on and discuss the draft *Western Joshua Tree Conservation Plan*.

(Pursuant to subdivision 1927.6(a), California Fish and Game Code)

15. Recovery planning for CESA-listed species

Receive a presentation on the Department's development of California Endangered Species Act recovery planning guidelines and announce the public review period and public meeting to discuss the draft guidelines.

(Pursuant to subdivision 2079.1, California Fish and Game Code)

16. Regulation change petitions (wildlife and inland fisheries)

(Pursuant to Section 662)

(A) Petitions for action today

Consider whether to grant, deny, or refer for additional review, petitions for regulation change received at previous meetings. Petitions granted today will be added to the Commission's rulemaking calendar for development and future consideration.

- I. *Petition 2020-016: Authorize use of a crossbow with a scope for those with visual impairments.*

(B) New petitions

Receive new petitions for regulation change.

Consideration of whether to grant, deny, or refer for additional review is expected to be scheduled for the June 11-12, 2025 Commission meeting.

(C) Referred petitions

Receive comments on petitions previously referred by the Commission to staff, legal counsel, a Commission committee, or the Department for review and recommendation.

Commission action on any referred petition will be scheduled for consideration once a recommendation is received.

17. Non-regulatory requests from previous meetings (wildlife and inland fisheries)

Consider and potentially act on non-regulatory requests submitted by members of the public at previous meetings.

18. Committee and Department reports

Receive updates on items of note since the previous Commission meeting from Commission committees and Department divisions.

(A) ***Tribal Committee***

Receive summary and consider approving recommendations from the April 15, 2025 Committee meeting. Discuss referred topics and consider revisions to topics and timing.

(B) ***Wildlife Resources Committee***

Discuss referred topics and consider revisions to topics and timing. Consider approving draft agenda topics and changing the meeting location for the next committee meeting on May 15, 2025.

(C) ***Department Wildlife and Fisheries Division, and Department Ecosystem Conservation Division***

April 17, 2025; 8:30 AM

Call to Order/Roll Call to Establish Quorum

Consent Items

19. Commercial California halibut and white seabass set gill nets

Consider adopting proposed amendments required by the Office of Administrative Law to regulations for commercial California halibut and white seabass set gill net fisheries regulations.

(Amend section 174.1)

20. Commercial take of red and other sea urchin and sea cucumber

Consider adopting proposed amendments to regulations for commercial take of red and other sea urchin and sea cucumber.

(Amend sections 120.7 and 128, and add Section 120.8)

21. Commercial harvest of kelp, including sea palm, and other aquatic plants

Consider adopting proposed amendments to regulations for commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and references.

(Amend sections 165 and 705.1)

Discussion and Action Items

22. Recreational crab fishing gear and commercial passenger fishing vessel trap validation

Consider authorizing publication of notice of intent to amend regulations for recreational crab fishing gear and commercial passenger fishing vessel trap validation.

(Amend Section 29.80, 29.85, 190, 195 and 701).

23. Recreational take of barred sand bass

Consider adopting proposed amendments to regulations for the recreational barred sand bass fishery.
(Amend Section 28.30)

24. Market Squid

(A) ***Market Squid Fishery Management Plan***

Receive and conduct a public hearing on the draft amended “Market Squid Fishery Management Plan.”

(Pursuant to sections 7075, 7077 and 7078, California Fish and Game Code)

(B) ***Commercial take of market squid***

Consider authorizing publication of notice of intent to amend regulations for the commercial take of market squid.

(Amend sections 53.01, 149 and 149.1; repeal sections 53.02 and 53.03).

25. Application for a restricted species permit amendment

Review an application for a restricted species permit amendment from the University of California San Diego to import, possess, transport or rear, or conduct research on transgenic painted urchins and transgenic sea squirts, and take action consistent with the Commission regulation, if warranted.

(Pursuant to subdivision 15007(e), California Fish and Game Code, and subsection 671.1(a)(8)(H), Title 14, CCR)

26. Experimental fishing permit (EFP) major amendment request

Potentially reconsider and act on a major amendment request for an EFP (Commission tracking # 2023-02) approved to test pop-up fishing systems in the California Dungeness crab fishery.

(Pursuant to Section 91)

27. Commission Policy on Naming Installations

Discuss and potentially approve amendments to the Commission’s Policy on *Naming Installations*, including changing the policy’s title to *Naming Protected Areas*.

(Pursuant to Section 703, California Fish and Game Code)

28. Regulation change petitions (marine)

(Pursuant to Section 662)

(A) ***Petitions for action today***

Consider whether to grant, deny, or refer for additional review, petitions for regulation change received at previous meetings. Petitions granted today will be added to the Commission’s rulemaking calendar for development and future consideration.

I. *Petition 2025-01: Request to amend methods of recreational take of limpets*

(B) ***New petitions***

Receive new petitions for regulation change.

Consideration of whether to grant, deny, or refer petitions for additional review is expected to be scheduled for the June 11-12, 2025 Commission meeting.

(C) ***Referred petitions***

- I. Receive public comments on petitions previously referred by the Commission to staff, legal counsel, a Commission committee, and/or the Department for review and recommendation.
- II. ***Marine protected area (MPA) petitions: Amended petitions update***
Receive a written staff update regarding amendments submitted for MPA petitions previously referred for review and recommendation, but not yet scheduled for action. Receive an updated summary of MPA petitions in “bin 2” with proposed actions reflecting submitted amendments.

Commission action on any referred petition will be scheduled for consideration once a recommendation is received.

29. Non-regulatory requests from previous meetings (marine)

Consider and potentially act on non-regulatory requests submitted by members of the public at previous meetings.

30. Committee and Department reports

Receive updates on items of note since the previous Commission meeting from Commission committees and Department divisions.

(A) ***Marine Resources Committee***

Receive summary and consider approving recommendations from the March 13, 2025 Committee meeting. Discuss referred topics and consider revisions to topics and timing.

(B) ***Department Marine Region***

I. ***Recreational ocean salmon and Pacific halibut***

Update on annual regulations and automatic conformance to federal regulations, including potential for a “bubble fishery” for ocean salmon at Pillar Point Harbor.

(Pursuant to Section 1.95)

II. ***Recreational Dungeness crab***

Public discussion of action taken by the Department director in the recreational Dungeness crab fishery to prohibit the use of crab traps in Fishing Zone 4 (Pigeon Point to Lopez Point) effective at 6:00 p.m. on April 15, 2025.

(Pursuant to Section 29.80)

31. Commission administrative items

(A) ***Legislative report***

Receive updates on legislative activity and consider providing direction to staff on potential actions.

(B) ***Rulemaking timetable updates***

Review and potentially approve changes to the perpetual timetable for anticipated regulatory actions.

(C) ***Future meetings and new business***

Review logistics and approve draft agenda items for the next Commission meetings (May 14 and June 11-12, 2025), consider any changes to approved

meeting dates or locations, or introduce new business for a future meeting agenda.

General Public Comment

32. General public comment for items not on the agenda

Receive public comment regarding topics within the Commission's authority that are not included on the agenda.

Note: The Commission may not discuss or take action on any matter raised during this item, except to decide whether to place the matter on the agenda of a future meeting (Section 11125 and subdivision 11125.7(a), California Government Code).

Adjourn

Public Receipt of Documents

This section of the agenda highlights reports or other significant documents received by the Commission since the previous meeting. Any Commission discussion or action on these documents will be noticed and placed on the agenda of a future meeting. Since February 13, 2025, the Commission has received three documents:

1. Department's evaluation report on the petition to list quino checkerspot butterfly (*Euphydryas editha quino*) as endangered under the California Endangered Species Act (CESA). Additional information about the petition is available on the Commission's CESA page under "Active Petitions" at <https://fgc.ca.gov/CESA#active-petitions>
2. Petition from Dr. Nick Jensen, Center for Biological Diversity, to list Gerry's curly-leaved monardella (*Monardella sinuate* subsp. *gerryi*) as endangered under CESA. Additional information about the petition is available on the Commission's CESA page under "Active Petitions" at <https://fgc.ca.gov/CESA#active-petitions>.
3. Petition from Lisa T. Belenky and Elizabeth Reid-Wainscoat, Center for Biological Diversity, to list Pacific pocket mouse (*Perognathus longimembris pacificus*) as threatened or endangered under CESA. Additional information about the petition is available on the Commission's CESA page under "Active Petitions" at <https://fgc.ca.gov/CESA#active-petitions>.

Executive Session

(Not open to the public)

At a convenient time during the regular agenda of its April 16-17, 2025 meeting, the Commission will recess from the public portion of the agenda and conduct a closed session on the agenda items below. The Commission is authorized to discuss these matters in a closed session pursuant to Government Code Section 11126, subdivisions (a)(1), (c)(3), and (e)(1), and Fish and Game Code Section 309. After closed session, the Commission will reconvene in public session, which may include announcements about actions taken during closed session.

- (A) Pending litigation to which the Commission is a party
 - I. The People of the State of California v. Hannam Chain U.S.A., Inc., et al. (restricted species) and Hannam Chain U.S.A., Inc., et al. v. California Fish and Game Commission (challenge to restricted species regulation)
 - II. The Ballona Wetlands Land Trust v. California Fish and Game Commission and California Dept. of Fish and Wildlife (challenge to decisions related to public uses on an ecological reserve)
 - III. The Ballona Wetlands Land Trust v. California Fish and Game Commission (Ballona Wetlands Ecological Reserve petition for regulation change)
 - IV. Wright v. Sklar (classification of ferrets)
 - V. Borba et al. v. Merced Co, Merced Irrigation Dist., California Dept. of Fish and Wildlife, and California Fish and Game Commission (complaint for damages related to flooding)
 - VI. Perez-Ramirez et al. v. County of Merced, City of Merced, Merced Irrigation Dist., California Dept. of Fish and Wildlife, and California Fish and Game Commission (complaint for damages related to flooding)
 - VII. Glenn et al. v. County of Merced, City of Merced, Merced Irrigation Dist., California Dept. of Fish and Wildlife, and California Fish and Game Commission (complaint for damages related to flooding)
- (B) Possible litigation involving the Commission
- (C) Staffing
- (D) Deliberation and action on license and permit items

California Fish and Game Commission Meeting Schedule

Note: As meeting dates and locations can change, please visit www.fgc.ca.gov for the most current list of meeting dates and locations. All Commission meetings will include a webinar/teleconference option for attendance and every effort will be made to ensure that committee meetings include the same.

Meeting Date	Commission Meeting	Committee Meeting
May 14, 2025	Teleconference Trinidad, Sacramento, St. Helena, Santa Cruz, and La Jolla	
May 15, 2025		Wildlife Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
June 11-12, 2025	Sacramento area	
July 17, 2025		Marine Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814go
August 12, 2025		Tribal California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
August 13-14, 2025	California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814	
September 11, 2025		Wildlife Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
October 8-9, 2025	Sacramento area	
November 6, 2025		Marine Resources California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814

Meeting Date	Commission Meeting	Committee Meeting
December 9, 2025		Tribal California Natural Resources Headquarters Building 715 P Street, 2nd Floor Sacramento, CA 95814
December 10-11, 2025	Sacramento area	

Other Meetings of Interest

Meetings listed here are organizations for which the Commission: (1) is a member, or (2) takes action based upon regulations developed by that organization.

Association of Fish and Wildlife Agencies

- September 21-24, 2025 – Tucson, AZ

Pacific Fishery Management Council

- June 12-18, 2025 – Rohnert Park, CA
- September 18-24, 2025 – Spokane, WA
- November 13-19, 2025 – Costa Mesa, CA

Pacific Flyway Council

- September 12, 2025 – Provo, UT

Western Association of Fish and Wildlife Agencies

- June 2-6, 2025 – Provo, UT
- June 1-5, 2026 – Boise, ID

Wildlife Conservation Board

- May 22, 2025 – Sacramento, CA
- August 28, 2025 – Sacramento, CA
- November 20, 2025 – Sacramento, CA
- February 2026 – Sacramento, CA

Important Commission Meeting Procedures Information

Welcome to a Meeting of the California Fish and Game Commission

This year marks the 155th year of operation of the Commission in partnership with the California Department of Fish and Wildlife. Our goal is the preservation of our heritage and conservation of our natural resources through informed decision making; Commission meetings are vital in achieving that goal and we provide this information to be as effective and efficient toward that end. Welcome, and please let us know if you have any questions.

Persons with Disabilities

Persons with disabilities needing reasonable accommodation to participate in public meetings or other Commission activities are invited to contact the Department's Civil Rights Office (CRO) at civilrights@wildlife.ca.gov. Accommodation requests for facility and/or meeting accessibility and requests for American Sign Language interpreters should be submitted at least two weeks prior to the event. Requests for real-time captioners should be submitted at least four weeks prior to the event. These timeframes are to help ensure that the requested accommodation is met. If a request for an accommodation has been submitted but is no longer needed, please contact the CRO immediately.

Stay Informed

To receive meeting agendas and regulatory notices about those subjects of interest to you, visit the Commission's website, www.fgc.ca.gov, to sign up on our electronic mailing lists.

Submitting Written Comments

The public is encouraged to comment on any agenda item. Submit written comments by one of the following methods: E-mail to fgc@fgc.ca.gov; mail to California Fish and Game Commission, P.O. Box 944209, Sacramento, CA 94244-2090; deliver to California Fish and Game Commission, 715 P Street, 16th Floor, Sacramento, CA 95814 (you must call at least one business day in advance to arrange delivery). Materials provided to the Commission may be made available to the general public.

Comment Deadlines

The **Comment Deadline** for this meeting is **5:00 p.m. on April 3, 2025**. Written comments received at the Commission office by this deadline will be made available to Commissioners prior to the meeting.

The **Supplemental Comment Deadline** for this meeting is **noon on April 11, 2025**. Comments received by this deadline will be made available to Commissioners at the meeting.

After these deadlines, written comments may be delivered in person to the meeting. Please bring 12 copies of written comments to the meeting and give them to the designated staff member just prior to speaking.

Petitions for Regulation Change

Any person requesting that the Commission adopt, amend, or repeal a regulation must complete and submit form FGC 1, *Petition to the California Fish and Game Commission for Regulation Change* (as required by Section 662, Title 14, CCR), available at <https://fgc.ca.gov/Regulations/Petition-for-Regulation-Change>. To be received by the

Commission at this meeting, petition forms must be received by the **Supplemental Comment Deadline** or delivered in person at the meeting during the regulation change petitions agenda item. Petitions received at this meeting will be scheduled for consideration at the next regularly scheduled business meeting, unless the petition is rejected under staff review pursuant to subsection 662(b), Title 14, CCR.

Non-Regulatory Requests

All non-regulatory requests follow a two-meeting cycle to ensure proper review and thorough consideration of each item. All requests submitted by the **Supplemental Comment Deadline** (or heard during general public comment at the meeting) will be scheduled for receipt at this meeting and scheduled for consideration at the next regularly scheduled business meeting.

Speaking at the Meeting

To speak on an agenda item in-person, please complete a “speaker card” and provide it to the designated staff member before the agenda item is announced. Please complete one speaker card per item. Cards will be available near the entrance of the meeting room.

To speak on an agenda item via Zoom or phone, please “raise” your hand either through the Zoom function or by pressing *9 once on your phone when prompted at the beginning of the agenda item.

1. In-person speakers will be identified in groups; please line up when your name is called. Speakers on Zoom or phone will be identified by your Zoom display name or the last three digits of your phone number; listen closely for when your name or number is called.
2. When addressing the Commission, please give your name and the name of any organization you represent, and provide your comments on the item under consideration.
3. If there are several speakers with the same concerns, you are encouraged to appoint a spokesperson and avoid repetitive testimony.
4. The presiding commissioner will allot between one and three minutes per speaker per agenda item, subject to several exceptions:
 - a. The presiding commissioner may allow up to five minutes for an individual speaker if a minimum of three individuals who are present when the agenda item is called have ceded their time to the designated spokesperson, and the individuals ceding time forfeit their right to speak to the agenda item.
 - b. In-person participants ceding their time shall complete a speaker card and approach the staff table with the spokesperson so that staff may confirm the presence of those ceding their time. Persons participating via Zoom or phone and ceding their time to another speaker must notify the Commission at fgc@fgc.ca.gov prior to the start of the agenda item, including to whom they are ceding their time, and must be present during the agenda item.
 - c. Individuals may receive advance approval for additional time to speak if such requests are received by email or delivery to the Commission office by the **Supplemental Comment Deadline**. The president or designee will approve or deny the request no later than 5:00 p.m. two days prior to the meeting.
 - d. An individual requiring an interpreter is entitled to at least twice the allotted speaking time pursuant to Government Code Section 11125.7(c).

- e. An individual may receive additional time to speak to an agenda item at the request of any commissioner.

Agenda items may be heard in any order and on either day pursuant to the discretion of the presiding commissioner.

Visual Presentations/Materials

All electronic presentations must be submitted by the ***Supplemental Comment Deadline*** and approved by the Commission executive director before the meeting.

1. Electronic presentations must be provided by email to fgc@fgc.ca.gov. If the presentation file is too large to send via email, contact staff to identify an alternative method for submitting the file.
2. All electronic formats must be Windows PC compatible.
3. If presenting at the in-person meeting location, it is recommended that you bring a print copy of your presentation in case of technical difficulties.

Staff Summary for April 16-17, 2025

19. Commercial California Halibut and White Seabass Set Gill Nets (Consent)**Today's Item**Information ☐Action ☒

Consider adopting proposed amendments required by the Office of Administrative Law for commercial California halibut and white seabass set gill net fisheries regulations.

Summary of Previous/Future Actions

- | | |
|--|---------------------------|
| • Marine Resources Committee (MRC) vetting | 2022 – 2023, various; MRC |
| • MRC discussion and recommendation | November 16, 2023; MRC |
| • Notice hearing | April 17-18, 2024 |
| • Discussion hearing | June 19-20, 2024 |
| • Adoption hearing | August 14-15, 2024 |
| • 15-day notice issued | December 19, 2024 |
| • Today's adoption of revised regulatory language | April 16-17, 2025 |

Background

At its August 2024 meeting, the Commission adopted regulations related to commercial California halibut and white seabass set gill nets. For background information on the adopted regulations, see Exhibit 1.

Following adoption by the Commission, the regulatory language was modified to make changes required by the Office of Administrative Law (OAL) during OAL's review of the regulation. The changes to the regulatory language (Exhibit 2) improved the clarity and enforceability of the regulations. Under delegated authority, the Commission executive director determined that the changes were minor given the commissioners direction and intent, and that the changes were consistent with Commission approval in August 2024.

The Commission provided notice of the changes to interested and affected parties on December 19, 2024, and no public comments were received by the notice's 15-day comment deadline on January 3, 2025. After public notice of the changes and the January comment deadline, the Commission resubmitted the regulation to OAL. OAL asserted that the Commission would need to vote on and approve the changed regulation at a public meeting.

Today's action is administrative only, to satisfy OAL's requirement for the Commission to adopt the changed language contained in the December notice. The Commission is not expected to engage in any discussion, and any additional changes to the regulatory language would be outside the scope of the December notice and today's action.

Significant Public Comments (N/A)**Recommendation**

Commission staff: Under a motion to adopt the consent calendar, adopt the revised regulatory language as it appears in Exhibit 2

Staff Summary for April 16-17, 2025

Exhibits

1. [Staff Summary for August 14-15, 2024 Commission meeting, Agenda Item 6 \(for background purposes only\)](#)
2. [Description of specific edits and revisions to adopted regulatory language, December 19, 2024](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 19 through 21 on the consent calendar.

Staff Summary for April 16-17, 2025

20. Commercial Take of Red and Other Sea Urchin and Sea Cucumber (Consent)**Today's Item**Information ☐Action ☒

Consider adopting proposed amendments to regulations for commercial take of red and other sea urchin and sea cucumber.

Summary of Previous/Future Actions

- | | |
|---|--------------------------|
| • Petition 2023-04 submitted by California Sea Urchin Commission | June 2023 |
| • Referred to Marine Resources Committee (MRC) for vetting and Department for review and recommendation | August 2023 |
| • MRC vetting and recommendation | July 18, 2024; MRC |
| • Approved MRC recommendation to advance regulation changes | August 14-15, 2024 |
| • Notice hearing | February 12-13, 2025 |
| • Today's discussion and adoption hearing | April 16-17, 2025 |

Background

The Department requests amendments to commercial sea urchin fishing regulations, as detailed in the initial statement of reasons (ISOR) and proposed regulatory language (exhibits 4 and 5). The amendments improve fishing opportunities and improve clarity and efficiency of existing regulations. The proposed amendments modify the regulations consistent with petition #2023-04, in part; that petition was submitted by the California Sea Urchin Commission and granted by the Commission for consideration. Exhibits 1 and 2 provide additional background.

Proposed Regulatory Amendments

The proposed amendments will: (1) allow commercial fishermen to assist urchin divers, (2) remove the Friday fishing prohibition in the northern fishery for June-October, (3) remove a portion of the South Caspar Point Sea Urchin Closure, (4) increase clarity and efficiency in the regulations, and (5) make non-substantive changes, including to the commercial dive log (Exhibit 6) and to commercial sea cucumber regulations.

Significant Public Comments

A commercial fisherman (Exhibit 10) requests regulatory changes that are not included in the ISOR: the fisherman requests to open closed areas and adjust the red sea urchin size limit to three inches.

Recommendation

Commission staff: Under a motion to adopt the consent calendar, adopt the proposed amendments to regulations as recommended by the Department.

Department: Adopt the proposed amendments to regulations as described in the ISOR and identified in the proposed regulatory language.

Staff Summary for April 16-17, 2025

Exhibits

1. [Staff summary for Agenda Item 6 of the July 18, 2024 MRC meeting \(*for background purposes only*\)](#)
2. [Staff summary for Agenda Item 20 of the February 12-13, 2025 Commission meeting \(*for background purposes only*\)](#)
3. [Department memo, received January 17, 2025](#)
4. [ISOR, dated February 18, 2025](#)
5. [Proposed regulatory language](#)
6. [Proposed amendments to commercial dive log \(form DFW 120.8\)](#)
7. [Economic and fiscal impact statement \(STD 399\)](#)
8. [Department presentation for Agenda Item 20 of the February 12-13, 2025 meeting](#)
9. [Department email, received March 24, 2025](#)
10. [Email from Jeff Baldwin, received February 13, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 19 through 21 on the consent calendar.

Staff Summary for April 16-17, 2025

21. Commercial Harvest of Kelp, Including Sea Palm, and Other Aquatic Plants (Consent)**Today's Item**Information ☐Action ☒

Consider adopting proposed amendments to regulations for commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and references.

Summary of Previous/Future Actions

- | | |
|---|--|
| • Referred sea palm review to Marine Resources Committee (MRC) | June 16-17, 2021 |
| • MRC and Tribal Committee (TC) discussed status of sea palm and harvest | March 24, 2022; MRC and April 19, 2022; TC |
| • Approved MRC recommendation to prioritize sea palm commercial harvest before other edible seaweed species | April 20-21, 2022 |
| • MRC vetting and recommendation | November 6-7, 2024; MRC |
| • Notice hearing | February 12-13, 2025 |
| • Today's discussion and adoption hearing | April 16-17, 2025 |

Background

Kelp and edible seaweed harvest is managed with other marine algae harvest through the Department's kelp management program, consistent with sections 165 and 705.1. The Department and Commission have been working to revise antiquated commercial kelp and seaweed regulations for over ten years through a multi-phase approach, to improve management and enforceability (see exhibits 1 and 2 for background and more details).

Current Regulations

Current sea palm regulations provide that anyone with a commercial kelp harvesting license may harvest sea palm by cutting and picking attached individuals and taking drift or loose individuals. However, current regulations do not include defined, specific, allowable harvest methods or set harvest limits or seasonal closures for commercial sea palm harvest.

Additionally, current kelp and aquatic plant regulations incorporate by reference the Kelp Harvesting License and Drying Application (DFW 658), the Commercial Kelp Harvester's Monthly Report (DFW 113), and the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) forms, which are in need of updates.

Proposed Regulation Amendments

Consistent with its decision at the February 2025 meeting, the Commission published a notice of intent to amend commercial kelp and aquatic plant harvesting regulations (including edible seaweed), as described in the initial statement of reasons (ISOR; Exhibit 4) and proposed

Staff Summary for April 16-17, 2025

regulatory language (exhibits 5 and 6); the proposed amendments can be grouped into six categories:

1. Define sea palm harvest methods.
2. Restrict incidental take of marine invertebrates when harvesting sea palm.
3. Prohibit sea palm harvest from Pigeon Point to the United States-Mexico border.
4. Revise forms DFW 113 and DFW 113A monthly reports.
5. Remove from Title 14 the incorporation by reference of Form 658 and, instead, list the required form fields in text format.
6. Make other edits to the regulations and forms for clarity and consistency.

No comments were received during the public comment period after the notice was published (Exhibit 9).

Significant Public Comments (N/A)

Recommendation

Commission staff: Under a motion to adopt the consent calendar, adopt the proposed amendments to regulations as recommended by the Department.

Department: Adopt the proposed amendments to regulations as described in the initial statement of reasons and identified in the proposed regulatory language.

Exhibits

1. [Staff summary for November 6-7, 2024 MRC meeting, Agenda Item 7 \(for background purposes only\).](#)
2. [Staff summary for February 12-13, 2025 meeting, Agenda Item 21 \(for background purposes only\)](#)
3. [Department memo, received January 24, 2025](#)
4. [ISOR, dated January 30, 2025](#)
5. [Proposed regulatory language](#)
6. [Proposed amendments to forms DFW 113, 113A and 658](#)
7. [Economic and fiscal impact statement \(STD 399\) and addendum](#)
8. [Department presentation for February 12-13, 2025 meeting, Agenda Item 21](#)
9. [Department email, received March 24, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendations for items 19 through 21 on the consent calendar.

Staff Summary for April 16-17, 2025

22. Recreational Crab Fishing Gear and Commercial Passenger Fishing Vessel (CPFV) Trap Validation**Today's Item****Information** ☐**Action** ☒

Consider authorizing publication of notice of intent to amend regulations for recreational crab fishing gear and CPFV trap validation.

Summary of Previous/Future Actions

- | | |
|--|--------------------------|
| • Granted regulatory petition, in part | June 14-15, 2023 |
| • Marine Resources Committee (MRC) received Department updates on and discussed potential changes to recreational crab regulations | March and July 2024; MRC |
| • MRC vetting and recommendation | November 6-7, 2024; MRC |
| • Today's notice hearing | April 16-17, 2025 |
| • Discussion hearing | June 18-19, 2025 |
| • Adoption hearing | August 13-14, 2025 |

Background

At its June 2023 meeting, the Commission granted a CPFV industry petition for regulation change (#2022-11), in part, to establish a Dungeness crab CPFV trap validation. The Commission also requested that the Department work with recreational crab fishery participants to develop other regulation options related to gear and entanglement concerns.

MRC considered the potential scope of amendments to recreational crab regulations at three meetings. At the third meeting, in November 2024, MRC recommended that the Commission advance a rulemaking to amend the recreational crab trap fishery regulations to address gear and marine life entanglement concerns, and allow a new trap validation for CPFVs (see Exhibit 1 for additional background).

The draft amendments presented today are intended to update the use of hoop nets; provide additional tools to address entanglement risk of recreational crab traps; prohibit unique line marks required in other fisheries from being used in recreational gear; prohibit tampering of gear by unauthorized users; clarify requirements for surface buoys; and address the Commission-granted petition by:

- Adding a hoop net tampering prohibition in regulation.
- Prohibiting the use of other fisheries' unique line markings or colors on gear for take of crustaceans.
- Standardizing surface gear configurations of hoop nets used north of Point Arguello.
- Updating the marine life entanglement evaluation process by adding a trigger for confirmed entanglements of any protected species referenced in the Risk Assessment and Mitigation Program (RAMP) as well as a depth constraint under the available management actions (Exhibit 6 provides background on RAMP).

Staff Summary for April 16-17, 2025

- Modifying the current trap validation by creating a separate CPFV validation which would no longer require individual CPFV passengers taking crab to have their own individual validations.
- Making clarifying and non-substantive edits to the affected regulations.

Further background and information on the proposal, including a comprehensive overview of current regulations, can be found in the draft initial statement of reasons (ISOR; Exhibit 3) and draft proposed regulatory language (Exhibit 4).

Today the Department will present an overview of the proposed regulatory changes for recreational crab fishing gear and CPFV trap validation (Exhibit 7).

Significant Public Comments (N/A)

Recommendation

Commission staff: Authorize publication of a notice of intent to amend regulations as recommended by the Department and MRC.

Committee: Authorize publication of a notice of intent to amend regulations related to gear and marine life entanglement concerns and trap validation for CPFVs.

Department: Authorize publication of a notice of intent to amend regulations as detailed in the draft ISOR.

Exhibits

1. [Staff summary from the November 6-7, 2024 MRC meeting, Agenda Item 6 \(for background purposes only\)](#)
2. [Department memo transmitting draft ISOR, received April 8, 2025](#)
3. [Draft ISOR](#)
4. [Draft proposed regulatory language](#)
5. [Draft economic and fiscal impact statement \(STD. 399\)](#)
6. [Sections 660.71 – 660.73, Title 50, Code of Federal Regulations \(for background purposes only regarding RAMP\)](#)
7. [Department presentation](#)

Motion

Moved by _____ and seconded by _____ that the Commission authorizes publication of a notice of its intent to amend Sections 29.80, 29.85, 195 and 701 related to recreational crab fishing gear and commercial passenger fishing vessel trap validations.

Staff Summary for April 16-17, 2025

23. Recreational Take of Barred Sand Bass**Today's Item****Information** ☐**Action** ☒

Consider adopting proposed amendments to regulations for the recreational barred sand bass fishery.

Summary of Previous/Future Actions

- | | |
|--|--------------------------|
| • Department update to the Marine Resources Committee (MRC); discussion on recreational barred sand bass fishery and considerations for potential regulation changes | July 17-18, 2024; MRC |
| • Department update and MRC recommendation | November 6-7, 2024; MRC |
| • Notice hearing | December 11-12, 2024 |
| • Discussion hearing | February 12-13, 2025 |
| • Today's adoption hearing | April 16-17, 2025 |

Background

At its December 2024 meeting, the Commission authorized publication of a notice of its intent to amend Section 28.30 related to recreational barred sand bass fishing. The Commission proposed a barred sand bass sub-bag limit (within the existing 5-fish bag limit for barred, kelp, and spotted sand bass combined) with a range of 0-5 fish for the summer spawning season (June through August) and a range of 1-5 fish for the remainder of the year. The Commission also specified a sunset provision that would automatically terminate the barred sand bass sublimit on June 1, 2028 unless the Commission took formal action to alter the sunset provision. Further background on the proposal can be found in exhibits 1 and 2, with details in the initial statement of reasons (Exhibit 3) and draft regulatory language (Exhibit 4).

At the February 2025 discussion hearing, the Commission considered input from various stakeholders and explored options for a temporary sub-bag limit that could encourage the recreational fishing industry and researchers to participate in gathering additional data, which could inform longer-term conservation measures for the barred sand bass fishery and stock.

Update

Comments received during the notice period, and Department responses, can be found in the pre-adoption statement of reasons (Exhibit 8). At today's adoption hearing, the Department will provide a presentation and recommendation (exhibits 6 and 8, respectively) to help inform the Commission's discussion and selection of barred sand bass bag limits, sub-bag limits for both the summer spawning season and the remainder of the year, and regulation sunset.

Significant Public Comments

1. Mayor Matthew Pagano, City of Dana Point, states that a reduction in bag limits for barred sand bass could impact the livelihoods of local businesses and may discourage recreational fishing opportunities in the city's waters. The mayor also encourages ongoing communication between the Department and local stakeholders, and for

Staff Summary for April 16-17, 2025

decisions related to management of barred sand bass to be informed by enhanced scientific data (Exhibit 9).

2. Lyall Belquist, Ph.D, provides two letters in support of the strongest proposed conservation measures for barred sand bass. States that regulation changes in 2013 were insufficient to protect the species, that a summer spawning season closure is necessary, and that industry data from the fishery supports significant restrictions (Exhibit 10).
3. Several commenters express opposition to new restrictions on the recreational take of barred sand bass, including one with over 700 signatures, citing concerns about social cultural and economic impacts. Representative samples of form email comments opposing restrictions on the recreational take of barred sand bass are provided, with concerns stated as lack of scientific evidence and data, potential irreversible damage to the marine environment, failure to acknowledge migratory behavior, a disproportionate impact on disadvantaged anglers, and economic impacts on fishing communities. (Exhibits 11 and 12.)
4. Both a recreational fishing advocacy organization (Exhibit 13) and seven environmental non-governmental organizations (NGOs) (Exhibit 14) strongly urge a seasonal closure (June – August) and stricter bag limit (two fish) to rebuild the barred sand bass fishery, in part by protecting vulnerable spawning aggregations, citing scientific findings substantiating necessity (Exhibit 13). The NGOs express deep concern over the Commission's apparent shift away from science-based management, stressing the importance of the Department's data and a precautionary approach under the Marine Life Management Act and climate change. Both letters emphasize sustainable management for all users and future generations, cautioning against prioritizing short-term stakeholder interests over long-term ecological health.

Recommendation

Commission staff: Recognizing the value of stakeholder and industry survey data, and contingent upon the inclusion of a short-term sunset provision of June 1, 2028, adopt the proposed regulations as recommended by the Department. Request the Department provide an update on collaborative efforts with the recreational fishing fleet and initial data results after the first season of data collection.

Department: Adopt the proposed regulations with a year-round sub-bag limit of four barred sand bass and a sunset provision allowing the regulations to expire on June 1, 2028.

Exhibits

1. [Staff summary from December 11-12, 2024 Commission meeting, Agenda Item 5 \(for background purposes only\)](#)
2. [Staff summary from November 6-7, 2024 MRC meeting, Agenda Item 5 \(for background purposes only\)](#)
3. [Initial statement of reasons](#)
4. [Noticed regulatory language](#)
5. [Economic and fiscal impact analysis \(STD. 399\)](#)

Staff Summary for April 16-17, 2025

6. [Department presentation](#)
7. [Department memo transmitting pre-adoption statement of reasons \(PSOR\), received April 8, 2025](#)
8. [Pre-adoption statement of reasons with summary of and responses to public comments, received April 8, 2025](#)
9. [Letter from Matthew Pagano, Mayor, City of Dana Point, received February 21, 2025](#)
10. [Emails from Lyall Bellquist, Ph.D, received February 11, 2025 and April 2, 2025](#)
11. [Representative sample of ten comments received opposed to further restrictions on barred sand bass, including an email signed onto by 715 individuals, received between February 11, 2025 and March 24, 2025](#)
12. [Sample letters opposed to restrictions on the take of barred sand bass, including a form letter signed by approximately 20 individuals, received February 12, 2025](#)
13. [Letter from Anupa Asokan, Founder and Executive Director, Fish On, and Brenton Spies, Ph.D., research scientist and fisherman, CSU Channel Islands, received April 3, 2025](#)
14. [Letter from Katie O'Donnell, US Ocean Conservation Manager, WILDCOAST, and six other environmental NGOs, received April 3, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the proposed changes to Section 28.30 related to recreational take of barred sand bass, with a *year-round sub-bag limit of 4 fish*, to expire June 1, 2028.

Staff Summary for April 16-17, 2025

24. Market Squid**Today's Item**Information ☐Action ☒

- (A) **Market Squid Fishery Management Plan (FMP):** Receive and conduct a public hearing on the draft amended Market Squid FMP.
- (B) **Commercial take of market squid:** Consider authorizing publication of notice of intent to amend regulations for the commercial take of market squid.

Summary of Previous/Future Actions

- Adopted Market Squid FMP and implementing regulations December 2004
- Referred market squid fishery management and FMP review to Marine Resources Committee (MRC) April 2021
- Process updates and MRC vetting 2021-2023, various; MRC
- Department Squid Fishery Advisory Committee (SFAC) meetings February 2023-May 2024
- Received and discussed SFAC report and proposed recommendations July 17-18, 2024; MRC
- MRC recommendation for amended Market Squid FMP and regulations November 7, 2024; MRC

(A) Draft amended Market Squid FMP

- Receive and discuss draft amended Market Squid FMP** April 16-17, 2025
- Discuss draft amended Market Squid FMP June 11-12, 2025
- Adopt amended Market Squid FMP August 13-14, 2025

(B) Amended regulations for commercial take of market squid

- Today's notice hearing** April 16-17, 2025
- Discussion hearing June 11-12, 2025
- Adoption hearing August 13-14, 2025

Background

The California market squid fishery is regularly the largest commercial fishery in California, in both landings volume and value. Managed under the Commission's authority since 2001, the fishery has operated within the framework of the Market Squid FMP adopted by the Commission in 2004 pursuant to the requirements and guidelines of the Marine Life Management Act (MLMA) (Section 7072 et seq., California Fish and Game Code). The Market Squid FMP defines fishery control rules, a restricted access program, environmental considerations, and fishery administration.

Staff Summary for April 16-17, 2025

While regulations have been periodically adopted to adaptively manage various aspects of the fishery, 2021 marked initiation of the first comprehensive review of market squid fishery management since the FMP's adoption in 2004. The Department developed a multi-phase management review supported by the Commission, and anchored it in a Squid Fishery Advisory Committee (SFAC) established in 2023 by the Department's director in accordance with Commission regulations (Section 53.02). SFAC played a crucial role in assisting with developing and reviewing fishery assessments, management options and proposals, and in advising the Department on potential FMP amendments and regulatory changes.

In November 2024, MRC recommended the Commission schedule Market Squid FMP amendments and management changes for the Commission's consideration based on the [SFAC's management review](#) and Department-proposed recommendations. The Department subsequently prepared the draft amended Market Squid FMP, and proposed regulations necessary to implement the amended plan and management recommendations, based on SFAC recommendations and MRC and Commission input.

(A) Draft Amended Market Squid FMP

Following tribal review, the Department is now submitting the draft amended Market Squid FMP for public review and potential adoption by the Commission (exhibits 1-3). The draft amended FMP integrates information from the Department's market squid enhanced status report (Exhibit 4), SFAC recommendations on proposed management measures, and other updated information regarding market squid. Proposed changes to management components from the original Market Squid FMP are shown in Exhibit 2, Executive Summary (pages i-iii).

MLMA requires that the Commission hold at least two public hearings prior to adopting an FMP amendment; however, the Commission has opted to hold three public meetings for this proposed Market Squid FMP amendment process to provide ample time for stakeholder and public input. MLMA also requires that the draft be available to the public for review at least 30 days prior to the first hearing and discussion. The Department complied with this 30-day requirement by [posting the draft amended Market Squid FMP on its website](#). After the Department posted the draft, Commission staff identified several revisions necessary to align the amended Market Squid FMP language with final proposed regulatory language concerning gear definitions, and to update references to the status of seabird species with respect to special status or listing under the California Endangered Species Act or federal Endangered Species Act. Commission staff requests Commission direction to make updates to the draft amended Market Squid FMP, which the Department would again make available for public review at least 30 days prior to the next hearing and discussion in June.

Today marks the first amendment process for any fishery management plan adopted by the Commission pursuant to the MLMA.. The MLMA master plan for fisheries clarifies the adoption process and provides that, in addition to public hearings, written comments may be submitted at any time up to adoption. The Commission may either adopt the FMP amendment, or, if it determines changes are warranted, may reject the FMP amendment for the Department to revise and resubmit for further public review before adoption.

Staff Summary for April 16-17, 2025

(B) Amended Regulations for Commercial Take of Market Squid

Consistent with updates in the draft amended Market Squid FMP, several regulatory amendments are necessary to implement management recommendations. Draft proposed amendments to market squid regulations reflect Department recommendations discussed and agreed upon during the multiyear SFAC process, and include scientific and enforcement input (see exhibits 5-7 for details).

- *Add a definition for “rib line” and require the use of a rib line on all purse seine nets after December 31, 2030.*

Current squid fishing regulations permit purse seine nets – the most widely-used of authorized gear types – which Department data suggests can scrape the seafloor when fishing in shallow areas, potentially increasing benthic bycatch and damaging squid eggs. To address the potential for damage, proposed regulations will require the use of a “rib line” on all purse seine nets after December 31, 2030. Defined as a non-metallic line, “rib line” is positioned at least 36 inches above the leadline and within 60 feet of both net ends, creating a “ribbing” effect that makes the net flutter rather than drag and reducing seafloor contact. The 2030 timeline allows for net retrofitting.

- *Extend the current market squid fishery weekend closure*

Current regulations prohibit squid fishing from noon on Friday to noon on Sunday statewide to allow for uninterrupted spawning. The proposed regulations extend the closure by five hours (from noon to 7 a.m.) on Friday statewide and an additional twelve-hour extension (from noon to 11:59 pm) on Sundays in the Monterey Bay area to allow additional uninterrupted spawning and benefit squid reproduction and spawning success (Table 1).

Table 1: Summary of draft proposed amendments to extend weekend closure

Location	Current Squid Fishing Closure	Proposed Squid Fishing Closure
Statewide	noon Friday to noon Sunday	7 a.m. Friday to noon Sunday
Monterey Bay area	noon Friday to noon Sunday	7 a.m. Friday to midnight (11:59 p.m.) Sunday

The Department recommends additional amendments to the regulations that were developed outside the SFAC process, including:

- *Reference to Market Squid FMP:* Remove the definition and incorporation by reference in Title 14, as the FMP is an informational document, not a regulation.
- *Repeal sections:* Repeal sections 53.02 and 53.03 as they either duplicate existing authority or are general policy statements, not regulations.
- *Define “purse seine skiff”:* Define and explicitly state that it does not require its own market squid vessel permit.

Staff Summary for April 16-17, 2025

- *Fishery closure notification*: Change the method of notification of fishery closure from broadcast by the U.S. Coast Guard (USCG) on VHF Channel 16 to the Department's website, due to USCG discontinuing VHF notifications.
- *National Marine Sanctuary name*: Update the name Gulf of the Farallones National Marine Sanctuary to the current name, Greater Farallones National Marine Sanctuary in regulations concerning the prohibition of using attracting lights for squid fishing within the sanctuary to protect seabirds.
- *Lights as take and weekend closure*: Clarify that using lights to attract and aggregate squid constitutes a form of take and is prohibited during the weekend closures, with the exception of live bait vessels, specifying that the use of such lights serves as "prima facie" evidence of commercial intent.
- *Live bait lighting exemption conditions*: Amend the weekend exemption for lighting on the weekend to take market squid as live bait, to ensure vessels do not use lights for other purposes while claiming to be engaged in the take of live bait, through the following exemption conditions:
 - Weekend use of lights is permitted only to aggregate squid when actively fishing for squid for live bait, to minimize use of lights and disturbance to squid spawning.
 - All squid taken must be maintained in a condition to be sold as live bait, not be used as live bait aboard the vessel that took it, and returned to the water prior to the end of the weekend closure if not sold.
 - Vessels intending to use this exemption to take squid for live bait during a weekend closure must notify the Department by email before leaving port on that fishing trip.
- *Lighting Shield Requirements*: Update lighting requirements that reduce light scatter of fishing operations from shielding the entire filament "of each light" to the entire filament "of each device capable of emitting light," to accommodate evolving lighting technology.
- *Minor Clarifications*: Make other minor changes for improved clarity and consistency throughout the regulations.

The MRC recommendation approved by the Commission at its December 2024 meeting included requiring electronic logs. The intent was to support the development of electronic logs for future implementation; therefore, electronic log requirements are not included in this rulemaking.

For today's meeting, the Department will give a presentation covering both the draft amended Market Squid FMP (A), and draft proposed amendments to Commission regulations governing the commercial take of market squid (B) (Exhibit 9).

Significant Public Comments (N/A)

Staff Summary for April 16-17, 2025

Recommendation

Commission staff: (A) Direct staff to work with the Department to update the draft amended FMP to align with proposed regulatory descriptions and the status of seabird species; and (B) authorize staff to publish notice of the Commission's intent to amend commercial market squid regulations as discussed today and recommended by the Department.

Department: (B) Authorize staff to publish notice of the Commission's intent to amend commercial fishing regulations as reflected in exhibits 6 and 7, and identify a proposed effective date of January 1, 2026 for amendments to the regulations.

Exhibits

1. [Department memo transmitting draft amended Market Squid FMP, received March 27, 2025](#)
2. [2025 draft Market Squid, Doryteuthis \(Loligo\) opalescens, Fishery Management Plan – Amendment 1](#)
3. [Market Squid Fishery Management Plan, dated April 1, 2005, with draft 2025 Amendment 1 revisions in track changes](#)
4. [2024 market squid enhanced status report, extracted from the California Marine Species Portal on February 3, 2025](#)
5. [Department memo transmitting ISOR, received April 10, 2025](#)
6. [Draft ISOR](#)
7. [Draft proposed regulatory language](#)
8. [Draft Form 399 economic and fiscal impact statement](#)
9. [Department presentation](#)

Motion

Moved by _____ and seconded by _____ that the Commission directs staff to work with the Department to integrate updates into the draft Market Squid Fishery Management Plan – Amendment 1, as discussed today, and authorizes the publication of a notice of its intent to amend sections 53.01, 149 and 149.1, and repeal sections 53.02 and 53.03, related to commercial take of market squid.

Staff Summary for April 16-17, 2025

25. Application For a Restricted Species Permit Amendment**Today's Item**Information ☐Action ☒

Review an application for a restricted species permit amendment to import, possess, transport or rear, or conduct research on, transgenic painted urchins and transgenic sea squirts, and take action, if warranted.

Summary of Previous/Future Actions (N/A)**Background**

Pursuant to Section 671.1, subsection (a)(8)(H), when the Department approves a restricted species permit for transgenic aquatic animals, the Commission must review the Department's determination during a regularly scheduled public meeting. The Commission may deny the issuance of a permit if it determines the applicant cannot meet regulatory requirements for importation, transportation, possession, and confinement.

In August 2024, the University of California San Diego (UCSD) submitted an application to the Department to amend its existing restricted species permit to authorize the use of transgenic painted urchins and sea squirts for research purposes (Exhibit 1). The transgenic organisms would be generated from existing in-house colonies. The applicant submitted an updated emergency action plan as required.

On January 31, 2025, the Commission received a memo from the Department indicating that its Marine Region staff and Shellfish Health Lab reviewed the permit application and assessed UCSD's proposed confinement and security measures for the transgenic urchins and sea squirts against regulatory requirements. The Department noted that UCSD agreed to comply with confinement and security conditions specified in Commission regulations in Section 671.1. Based on its satisfaction that UCSD can meet these conditions, the Department recommended the permit's issuance (Exhibit 2). The Department's recommendation emphasized UCSD's commitment to these conditions. However, while highlighting its review of containment and security obligations, the Department's memo does not address UCSD's ability to meet importation and transportation obligations.

February Commission meeting

At its February 2025 meeting, the Commission reviewed an [application for a new restricted species permit](#) from another research facility, for transgenic zebrafish. As part of the application process, the research facility disclosed that a UCSD researcher relocated transgenic zebrafish from UCSD to its facility, even though the facility was not yet permitted to house restricted species. Subsection (a)(8)(C) of Section 671.1 prohibits the movement of live transgenic aquatic animals from a permitted facility unless authorized by the Department.

The applicant's disclosure indicates that on September 3, 2024, wild-type embryos were transported by car from UCSD in La Jolla to the facility in Los Angeles to begin establishing a zebrafish colony; transgenic zebrafish were then transported from UCSD to the other facility between September 20 and October 10, 2024. UCSD did not request authorization from the Department to move live animals to Los Angeles; the other facility notified the Department of

Staff Summary for April 16-17, 2025

the movements on October 11, 2024 and immediately notified its research team that no research was to be conducted using the zebrafish until a permit was obtained.

As of November 1, 2024 there were approximately 25 tanks containing just over 700 fish at the then-unpermitted zebrafish facility, where the fish continued to receive care at levels applied at the UCSD facilities. In early April 2025, staff learned that UCSD was still unaware that live restricted species had been transported from its campus to a facility in Los Angeles, in multiple instances, without Department notification or authorization or use of UCSD's internal protocols for the movement of restricted species.

At the February Commission meeting, after staff highlighted the unauthorized animal movements, the Commission directed staff to send a letter to UCSD underscoring the importance of permit compliance and urging diligence in training and monitoring its students, staff, and faculty. Staff sent a letter to UCSD (Exhibit 3) and has been in communication with Department staff and UCSD directly. Under the circumstances, staff questions whether UCSD's current training, monitoring and compliance protocols are adequate "to meet all regulatory requirements for importation, transportation, possession, and confinement of transgenic aquatic animals", as outlined in Section 671.1. Staff also notes that the Department's recommendation to allow the requested permit amendments was formulated prior to realizing UCSD's unauthorized actions.

Significant Public Comments (N/A)

Recommendation

Commission staff: Continue this item to a future meeting. Request that UCSD submit documentation of its review of the identified incident and its plans to ensure diligence in training and monitoring of its students, staff, and faculty to demonstrate how UCSD will ensure consistent permit compliance.

Department: Allow the issuance of the permit.

Exhibits

1. [UCSD application for a permit amendment, received January 31, 2025 \(received by the Department August 22, 2024\)](#)
2. [Department memo, received January 31, 2025](#)
3. [Letter from executive director to UCSD, dated April 11, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission continues this item to a subsequent meeting and requests the University of California San Diego to submit documentation of its plans to ensure diligence in training and monitoring of its students, staff, and faculty that will demonstrate how UCSD will ensure satisfactory and consistent restricted species permit compliance.

Staff Summary for April 16-17, 2025

26. Experimental Fishing Permit (EFP) Major Amendment Request**Today's Item**Information ☐Action ☒

Reconsideration and possible action on a major amendment request for an EFP (Commission tracking #2023-02) approved to test pop-up fishing systems in the California Dungeness crab fishery.

Summary of Previous/Future Actions

- | | |
|---|--------------------------|
| • Approved EFP application #2023-02 | June 14-15, 2023 |
| • Department informed the Commission about an EFP major amendment request | February 6, 2024 |
| • Approved EFP major amendment | April 17-18, 2024 |
| • Department informed the Commission about a second EFP major amendment request | October 22, 2024 |
| • Published notice of EFP major amendment request | October 24, 2024 |
| • Department transmitted recommendation for the request | January 2, 2025 |
| • Published notice of receipt of Department recommendation | January 2, 2025 |
| • Approved EFP major amendment request | February 12-13, 2025 |
| • Today reconsider and potentially act on major amendment request | April 16-17, 2025 |

Background

The Commission and Department jointly administer the EFP Program, authorized by the California Fisheries Innovation Act of 2018 (California Fish and Game Code Section 1022) and implemented through Section 91, Title 14. The program fosters innovation in California's marine fisheries by allowing limited, short-term exemptions from state fishing laws to test new management approaches or conduct research. Learn more about the program at <https://wildlife.ca.gov/Conservation/Marine/EFP> and <https://fgc.ca.gov/EFP>.

Commission Decision at its February 2025 Meeting

Last year, the Department accepted a major amendment request for the National Marine Sanctuary Foundation's EFP (Commission tracking #2023-02) to support testing on-demand pop-up gear systems in the California Dungeness crab fishery; the Department conducted a technical review and transmitted a recommendation to the Commission.

At its February 2025 meeting, the Commission considered the EFP amendment request and Department recommendations (see Exhibit 1 for detailed information). During the meeting, the foundation requested that the Commission approve the conditions recommended by the Department, with the addition of a higher number of traps per trawl string. The additional request was intended to create consistency with another EFP major amendment (Subsea Sonics; Commission tracking #2022-03) that the Commission approved in December 2024; in that instance, the Commission increased the maximum number of traps to 50 per trawl string.

Staff Summary for April 16-17, 2025

The National Marine Sanctuary Foundation asserted that similar or consistent conditions would allow equitable opportunities across EFPs supporting gear trials in the Dungeness crab fishery. Ultimately, the Commission approved amendments to the EFP consistent with the recommendation of the Department and Commission staff, which included 20 traps per trawl string (see Table 1).

Table 1. Requested Amendments to EFP Conditions and Commission-Approved Amendments (National Marine Sanctuary Foundation; Commission Tracking #2022-03)

Condition Type	EFP Holder Request	Commission-Approved Amendments
Maximum Number of Authorized Agents and Vessels	Increase from 10 to 40	Increased to 40
Maximum Number of Traps per Trawl String	Increase from 10 to 50 (or as deemed appropriate by Department)	Increased to 20
Per-Vessel Trap Limit	Increase from 150 to vessel permit trap tier	Increased from 150 to vessel permit trap tier
Trap Service Maximum Interval	Increase from 96 hours (4 days) to 216 hours (9 days)	Increased to 168 hours (7 days), with exemptions for weather or undue hardship (notification required)

Update

Following the Commission's February 2025 approval, the National Marine Sanctuary Foundation paid the amendment fees to ensure the EFP activities would continue, and the Department issued the amended EFP with the approved EFP terms and conditions.

At the request of a commissioner to allow further consideration of equity issues related to the foundation's requested amendment relative to Subsea Sonic's approved EFP amendment, the Commission President added this item to today's agenda. Considering the requested amendments requires the Commission to reconsider its February decision on the EFP major amendment request and then deliberate further on the item. Any new decision by the Commission would need to respect the EFP holder's rights under the already-issued, amended EFP.

Today's Meeting

Today provides an opportunity to reconsider the EFP major amendment as approved by the Commission in February. If the Commission chooses to approve any condition different from the previously-approved conditions, the Department would need to prepare a modified

Staff Summary for April 16-17, 2025

amended EFP for execution; it is unclear whether additional fees would need to be paid by the EFP holder as in the case of a new major amendment request.

Significant Public Comments

The National Marine Sanctuary Foundation expresses appreciation for the Commission's February approval of its major amendment request supporting pop-up gear testing in the California Dungeness crab fishery and, specifically, the provisions allowing for increased participation by fishermen (i.e., authorized agents and vessels) and a longer trap service interval. The foundation requests that the Commission reconsider its decision related to the number of traps per string and to increase the number of traps permitted per string with the increased overall trap limit, consistent with the original amendment request. The foundation emphasizes that the adjustment is important to help ensure equitable fishing opportunities across all EFPs involved in pop-up gear trials in the Dungeness crab fishery, and to enable the success of the project, which is supported by state investments to advance testing and development of multiple gear types from various manufacturers. Acknowledging concerns about the potential for increased entanglement risk associated with longer trap trawls, the foundation has asked participating fishermen to voluntarily follow a best-practice approach by using non-buoyant groundline between traps, to minimize line exposure in the water column and reduce the likelihood of entanglement. (Exhibit 2)

Recommendation

Commission staff: Staff supports the National Marine Sanctuary Foundation request to reconsider its EFP amendment to include the number of traps per trawl string that aligns with the condition approved for a related EFP in December 2024 (up to 50 traps, with a second pop-up system required for trawl strings of more than 20 traps). The alignment would promote equity across similar EFPs, and help maintain participation in this EFP, which tests a variety of pop-up gear types from different manufacturers to inform anticipated gear authorizations.

Staff recommends all other terms previously recommended by the Department and staff, and approved in February, remain the same. Staff recognizes the foundation's effort to reduce entanglement risk from lines between traps by asking EFP participants to use non-buoyant groundline; staff recommends this be voluntary only.

Exhibits

1. [Staff summary for the February 12-13 Commission meeting, Agenda Item 24 \(for background purposes only\)](#)
2. [Letter from Greg Wells, Gear Innovations Manager, National Marine Sanctuary Foundation, received April 3, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission approves reconsidering the major amendment request for the EFP (Commission tracking ID #2023-02) approved in February 2025.

AND (next page)

Staff Summary for April 16-17, 2025

Moved by _____ and seconded by _____ that the Commission approves the major amendment request for the EFP (Commission tracking ID #2023-02) with the same conditions approved in February 2025, except to also *increase the number of traps per trawl to up to 50, with a second pop-up system required for trawl strings of more than 20 traps.*

Staff Summary for April 16-17, 2025

27. Commission Policy on Naming Installations**Today's Item**Information ☐Action ☒

Discussion and possible approval of amendments to naming installations policy, including renaming policy title to *Naming Protected Areas*.

Summary of Previous/Future Actions

- | | |
|---|--|
| • Discussed proposed revisions to <i>Naming Installations Policy</i> , directed staff to conduct more tribal outreach | April 17-18, 2024 and June 19-20, 2025 |
| • Tribal Committee (TC) discussed proposed changes to <i>Naming Installations Policy</i> | August 13, 2024; TC |
| • Discussed proposed changes to the <i>Naming Installations Policy</i> | October 9-10, 2024 |
| • TC discussed proposed changes to the <i>Naming Installations Policy</i> | December 10, 2024; TC |
| • Discussed proposed changes to the <i>Naming Installations Policy</i> and directed staff to refine language. | December 11-12, 2024 |
| • Today, discuss revised draft amended policy | April 16-17, 2025 |

Background

Since June 2023, staff has been advancing a plan to review and present potential updates to Commission policies, focusing on justice, equity, diversity, inclusion, and tribal perspectives. Due to significant capacity issues earlier in 2024, progress was limited to a small number of policies. However, staff remains committed to advancing this project in small, consistent stages.

Potential updates to the *Naming Installations Policy*, with a proposed renaming to *Naming Protected Areas Policy*, were initially presented at the Commission's February 2024 meeting and subsequently at Commission and committee meetings throughout 2024. Following discussion at its December 2024 meeting, the Commission directed staff to revise the draft proposed language. The goal of the revision was to refine content associated with honoring traditional tribal names and language for protected areas naming for further discussion at a future meeting.

As directed, Commission staff prepared revised proposed language that seeks to reflect the Commission's intent. Staff anticipated presenting the options for Commission consideration at this meeting. However, based on the need for additional review by the Department, and input from the Commission president and vice president as requested in December, staff recommends referring the revised proposed language to TC for additional tribal review, and considering potential action at the June 2025 Commission meeting. The TC meeting, originally scheduled for April 15, 2025, is proposed to be rescheduled to May 7, 2025.

Significant Public Comments

A commenter writes to oppose the draft policy amendment language as presented in February 2024, which considers traditional tribal placenames when naming or renaming protected areas, including marine protected areas. The commenter notes the limitations of the draft amended

Staff Summary for April 16-17, 2025

policy, such as removing the ability to honor individuals who have made contributions to California's natural environment [allowed in the current policy].

Recommendation

Commission staff: Refer the revised proposed language *Naming Installations Policy* (with proposed renaming as *Naming Protected Areas Policy*) to TC for review, and continue this item to the June 11-12, 2025 meeting.

Exhibits

1. [Letter from Keith Rootsaert, Giant Kelp Restoration, received April 3, 2025](#)

Motion (N/A)

Staff Summary for April 16-17, 2025

28. Regulation Change Petitions - Marine**Today's Item**Information ☐Action ☒

This is a standing agenda item for the Commission to receive new regulation change petitions and act on regulation change petitions received from the public at previous meetings. For this meeting:

1. Act on previously received regulation change petitions
2. Receive new petitions for regulation change
3. Receive comments on petitions previously-referred for review and recommendation but not yet scheduled for action, including an update on received amended petitions for modifications to marine protected areas (MPAs).

Summary of Previous/Future Actions**(A) *Petitions for Regulation Change – Scheduled for Action***

- Received Petition 2025-1 February 12-13, 2025
- **Today potentially act on Petition 2025-1 April 16-17, 2025**

(B) *New Petitions for Regulation Change – Receipt*

- **Today receive new petitions. April 16-17, 2025**
- Potentially act on new petitions June 11-12, 2025

(C) *Comments Received on Referred Petitions***Background****(A) *Action on Previously Received Regulation Change Petitions***

Petitions received at the previous meeting are scheduled for Commission action at its next regular Commission meeting, to (1) deny, (2) grant, or (3) refer to a Commission committee, staff, or the Department for further evaluation or information gathering. Referred petitions are scheduled for action once a recommendation is received.

Today, one regulation change petition is scheduled for action:

- I. Petition 2025-01: Request to amend methods of recreational take of limpets (Exhibit A2)

The staff recommendation and rationale, developed with input from Department staff, is provided in Exhibit A1.

(B) *Receive New Petitions for Regulation Change*

Pursuant to Section 662, any person requesting that the Commission adopt, amend, or repeal a regulation must complete and submit form FGC 1. Regulation change petition forms submitted by the public are “received” at this Commission meeting if they are

Staff Summary for April 16-17, 2025

delivered by the public comment or supplemental comment deadlines or delivered in person to the Commission meeting.

Under the Bagley-Keene Open Meeting Act, the Commission cannot discuss or act on any matter not included on the agenda, other than determine whether to schedule issues raised by the public for consideration at future meetings. Thus, petitions for regulation change generally follow a two-meeting cycle of receipt and decision. The Commission will act on petitions received at today's meeting at the next regularly scheduled Commission meeting (currently June 11-12, 2025), following staff evaluation, unless the petition is rejected under the 10-day staff review as prescribed in subsection 662(b).

Today, there are no new marine petition(s) for regulation change; however, amendments to five MPA petitions currently under review were received and are detailed under part (C) of this item.

(C) ***Referred Petitions***

Comments on Referred Petitions

This item is for receiving public comments for any petition previously referred for review and recommendation but not yet ready for Commission action. Action on any referred petition will be scheduled once the Commission receives a recommendation.

Marine Protected Area (MPA) Petitions Currently Under Review: Amended MPA Petitions

Following the Commission's action on five MPA petitions in December 2024 ("bin 1"), staff is providing an update on the remaining 15 pending MPA petitions ("bin 2"). The Commission allowed the 15 MPA petitioners to submit amended versions of original petitions, setting deadlines of January 10, 2025 for submission of statements of intent to amend and March 14, 2025 for submission of final amendments.

In February 2025, staff reported having received three amended petitions and six statements of intent to amend (details available in the [February Commission Meeting staff summary](#)).

Update

Of the six petitions with statements of intent, four submitted amended MPA petitions by the deadline, one with an extension to March 26 to allow for tribal input (those petition tracking numbers have been appended with "AM 1"). Additionally, one amended petition received by the January deadline was resubmitted with clarifying revisions (the petition tracking number has been appended with "AM2"). The amended petitions are included as exhibits.

Therefore, a total of seven amended MPA petitions were received and are the versions that will be reviewed by the Department and Commission. Each petitioner submitted a summary of, and rationale for, their amendments. In addition, petitioners resubmitted their original Form FGC1 with the changes from the original MPA petition indicated with strikethrough and underlined text to assist in identifying what was changed. The seven petitions, as amended, are:

Staff Summary for April 16-17, 2025

- Petition 2023-23MPA_AM1 (exhibits C3, C4)
- Petition 2023-27MPA_AM1 (exhibits C5, C6)
- Petition 2023-15MPA_AM2 (exhibits C7, C8)
- Petition 2023-24MPA_AM1 (exhibits C9, C10)
- Petition 2023-28MPA_AM1 (exhibits C11, C12)
- Petition 2023-29MPA_AM1 (exhibits C13, C14)
- Petition 2023-33MPA_AM1 (exhibits C15, C16)

Exhibit C1 summarizes the seven amended bin 2 petitions, separated into each distinct proposed action, and identifies which proposed actions were amended. In total, the seven petitions collectively include 16 actions that were amended by the petitioners. Petitioners for the seven petitions with amendments were given an opportunity to review the table for accuracy; additional edits may be necessary.

The Department is in the process of integrating the petition amendments into its online [MPA Petition Process StoryMap](#).

Next Steps for Review of Referred MPA Petitions

Exhibit C2 is a table of all bin 2 petitions, separated into distinct proposed actions, with the amendments submitted by petitioners fully incorporated. This table reflects the versions of the petitioned actions that will undergo evaluation by the Department.

At its February meeting, the Commission indicated its interest in potential additional meeting dates to jointly review MPA petition evaluations and recommendations in a committee-style format (similar to a legislative “committee of the whole”), to allow for more informal discussion and deliberation amongst commissioners about the complex evaluations and important decisions regarding MPA petitions. The Commission requested that staff provide potential meeting dates adjoining Commission meetings either late in 2025, or early 2026, to follow Department release of petition evaluations and recommendations currently proposed for the November MRC meeting (see Agenda Item 30A, MRC). Staff is exploring the feasibility of different dates and will bring options to today’s meeting.

Significant Public Comments

(C) *Referred Petitions*

1. *2023-24MPA_AM1*: The petitioner summarizes their amendments, proposed evaluation criteria aligned with the Marine Life Management Act (MLMA) master plan, highlighted their connection to the Laguna MPAs (including their Handicapped Scuba Project), and invited staff and commissioners to visit (Exhibit C17).
2. *2023-28MPA_AM1*: The Santa Barbara Community Action Network (SBCAN) (Exhibit C18) and the mayor of the City of Guadalupe (Exhibit C19) express strong support for the proposed Point Sal State Marine Reserve (SMR). SBCAN emphasizes marine life protection; its cultural significance for local indigenous communities; its benefits for

Staff Summary for April 16-17, 2025

wildlife viewing, ecotourism, and the local economy; and the MPA's potential role in ocean health and climate resilience. The mayor specifically highlights the importance of protecting biodiversity at Point Sal for future generations and of the Chumash people's connection to the location.

3. *2023-29MPA_AM1*:
 - a. Two Carpinteria residents, one a graduate student at UC Santa Barbara specializing in benthic ecosystem research, oppose the proposed MPA for Carpinteria Reef. They argue it is the closest accessible shore fishing spot for people without boats, cite a lack of scientific justification for MPA designation, question the need for added protection for juvenile white sharks already illegal to harvest, and dispute the potential for spillover effects due to the lack of fishable adjacent areas and uncertain larval transport due to currents. Finally, they highlight its disproportionate impact on underrepresented communities, contending the MPA would negatively impact low-income families by limiting shore fishing access. They also disagree that increasing Native American access requires excluding the public (exhibits C20 and C21).
 - b. California Surf Fishing expresses support for Mishopshno State Marine Conservation Areas (SMCA) after engaging with petition co-sponsors and Fish On, another fishing advocacy organization. They also engaged Carpinteria shore anglers and obtained around 1,000 signatures online from anglers in support of shore fishing in SMCAs. They support the petition, as it meets connectivity guidelines, would allow low-impact fishing, and has the potential to strengthen the state's MPA network (Exhibit C23).
4. *2023-33MPA_AM1*: A surf fisher opposes the proposed Cabrillo SMR expansion, stating it would eliminate a valuable shore fishing location, one of the few productive ones in the region. While generally supporting MPAs, they suggest moving the boundary southward by 1.5 miles to preserve this shore fishing spot, emphasizing the importance of shore fishing for equity, its minimal environmental impact, and angler quality of life (Exhibit C22).
5. *2023-15MPA_AM2*: The petitioner advocates for a standardized evaluation process for all MPA petitions using the MLPA Master Plan for MPAs framework. The petitioner highlights the master plan's measurable regional objectives, structured under the MLPA's six goals, and notes support from various organizations endorsing its adaptive management approach. To illustrate this framework's use, the petitioner analyzes their own petition against relevant south coast regional objectives, arguing the analysis demonstrates that it aligns with master plan goals. This analysis was also provided to the MRC in March (Exhibit C24).

Recommendation

Commission staff:

(A) *Action on Previously Received Regulation Change Petitions*

Deny Petition 2025-01 for reasons set forth in Exhibit A1.

Staff Summary for April 16-17, 2025

(C) Referred Petitions

Receive and discuss potential meeting dates in late 2025 or early 2026 (to be proposed by staff during today's meeting) for the Commission to review MPA petition evaluations and recommendations, using a committee-style format, after Department release. Schedule dates, if any, under Agenda Item 31(C) Future Meetings.

Exhibits

- A1. [Summary of petition for regulation change scheduled for action, and recommendation](#)
- A2. [Petition 2025-01, recreational take of limpets, received January 15, 2025.](#)

Amended MPA Petitions and Petitioners Summary Statements

- C1. [Summary of the seven amended MPA petitions in bin 2, separated into discrete action items, with proposed actions and amendment justifications as stated by the petitioner, dated April 10, 2025](#)
- C2. [Summary of all bin 2 MPA petitions, separated into discrete action items and updated to incorporate amendments submitted by petitioners, with the proposed actions and justifications as stated by the petitioner, dated April 10, 2025](#)
- C3. [Petition 2023-23MPA AM1, received January 13, 2025](#)
- C4. [Overview of Petition 2023-23MPA AM1 from Keith Rootsart, Giant Giant Kelp Restoration, January 13, 2025](#)
- C5. [Petition 2023-27MPA AM1, received January 17, 2025](#)
- C6. [Overview of Petition 2023-27MPA AM1 from Azsha Hudson, Environmental Defense Center \(EDC\), January 17, 2025](#)
- C7. [Petition 2023-15MPA AM2, updating version AM1, received March 14, 2025](#)
- C8. [Overview of Petition 2023-15MPA AM2 from Blake Hermann, March 14, 2025](#)
- C9. [Petition 2023-24MPA AM1, received March 11, 2025](#)
- C10. [Overview of Petition 2023-24MPA AM1 from Mike Beanan, Laguna Bluebelt Coalition, March 11, 2025](#)
- C11. [Petition 2023-28MPA AM1, received March 14, 2025](#)
- C12. [Overview of Petition 2023-23MPA AM1 from Sandy Aylesworth and Bella Sullivan, National Resource Defense Council \(NRDC\), received March 14, 2025](#)
- C13. [Petition 2023-29MPA AM1, received March 26, 2025](#)
- C14. [Overview of Petition 2023-29MPA AM1 from Sam Cohen, Santa Ynez Band of Chumash Indians, Azsha Hudson, EDC, and Sandy Aylesworth, NRDC, received March 26, 2025](#)
- C15. [Petition 2023-33MPA AM1, received March 14, 2025](#)
- C16. [Overview of Petition 2023-33MPA AM1 from Laura Deehan, Environment California, and Marcella Gutiérrez-Graudiņš, Azul, received March 14, 2025](#)

Comments on Referred MPA Petitions

- C17. [Letter from Mike Beanan, Laguna Bluebelt Coalition, received March 14, 2025](#)

Staff Summary for April 16-17, 2025

- C18. [Letter from Jeanne Sparks, SBCAN, received March 13, 2025](#)
- C19. [Letter from Ariston Julian, Mayor, City of Guadalupe, received April 3, 2025](#)
- C20. [Email from William Ray, graduate student at UCSB and Carpinteria resident, received March 16, 2025](#)
- C21. [Email from Kyle Murphy, Carpinteria resident, received March 16, 2025](#)
- C22. [Email from Brian Radibratovic, surf fisher, received March 12, 2025](#)
- C23. [Email from Kaspar Kazazian, California Surf Fishing, received March 1, 2025](#)
- C24. [Letter from Blake Hermann, received February 26, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendation to deny Petition 2025-01.

OR

Moved by _____ and seconded by _____ that the Commission adopts the following action for Petition 2025-01: _____.

Staff Summary for April 16-17, 2025

29. Non-Regulatory Requests from Previous Meetings (Marine)**Today's Item**Information ☐Action ☒

Consider and potentially act on requests for non-regulatory action received from members of the public at previous meetings.

Summary of Previous/Future Actions

- Commission received requests February 12-13, 2025
- **Today, potentially act on requests April 16-17, 2025**

Background

Requests for non-regulatory action are received from members of the public under general public comment. All non-regulatory requests follow a two-meeting cycle to ensure proper review and thorough consideration of each item. All requests received in writing or public testimony during general public comment at the previous Commission meeting are scheduled for consideration at the next regular meeting. Non-regulatory requests that have been referred to staff, legal counsel, a committee, or the Department for review and recommendation are scheduled for action once a recommendation has been received.

Two marine non-regulatory requests received in February are scheduled for action today. Both requests are related to aquaculture. Exhibit 1 provides the staff recommendations and rationale, developed with input from the Department.

Significant Public Comments (N/A)**Recommendation**

Commission staff: Adopt the staff recommendations for the non-regulatory requests as reflected in Exhibit 1.

Exhibits

1. [Summary of non-regulatory requests and staff recommendations for requests scheduled for action, updated April 1, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendation for action on the non-regulatory requests as reflected in Exhibit 1.

OR

Moved by _____ and seconded by _____ that the Commission adopts the staff recommendation for action on the non-regulatory requests as reflected in Exhibit 1, except as follows: _____.

Staff Summary for April 16-17, 2025

30A. Marine Resources Committee (MRC)**Today's Item**Information ☐Action ☒

Receive summary and consider approving recommendations from the March 13, 2025 committee meeting. Discuss referred topics and consider revisions to topics and timing.

Summary of Previous/Future Actions

- | | |
|---|---|
| • Previous MRC meeting | March 13, 2025 |
| • Today consider MRC recommendations | April 16-17, 2025 |
| • Next MRC meeting | July 17, 2025: MRC
(proposed to add July 16) |

Background

MRC works under Commission direction to set and accomplish its work plan (Exhibit 1). Today, the Commission will receive a report on the previous MRC meeting and recommendations, as well as provide direction for any referred topics and revisions to MRC topics and timing.

Previous Committee Meeting

MRC met on March 13 in Sacramento, with Zoom and phone options. Official meeting minutes (video) are posted on the [Commission's YouTube page](#) with a link also available on the Commission's website meeting page at fgc.ca.gov/Meetings/2025; an abbreviated summary is included in this document.

Commercial Coonstripe Shrimp Fishery

MRC received public input regarding potential regulation changes for a regular rulemaking following Commission adoption of emergency regulations. The Department will work with stakeholders and fishermen to explore options for a regular rulemaking. Department staff will present proposed management options at the July 2025 MRC meeting.

Application for a New Aquaculture Lease – Santa Barbara Sea Ranch, Inc.

State water bottom lease applicant Santa Barbara Sea Ranch, Inc. presented its proposed lease project offshore Santa Barbara County to receive public and MRC input for consideration during the environmental review process, consistent with the Commission's enhanced leasing process. The application was originally submitted in 2018 and received a Commission public interest determination at that time. Staff presented background on the enhanced leasing process and how the new lease application fits within it. The MRC co-chairs provided guidance to the applicant, including to re-engage with the local community.

Note: Subsequent to the meeting, the applicant submitted a request to pause the application.

Status of Existing Aquaculture Leases

The Department presented a status update on the Commission's 17 existing aquaculture leases, pending requests from leaseholders, and new applications under review. MRC

Staff Summary for April 16-17, 2025

requested two aquaculture updates in July: (1) An update from the California Ocean Protection Council (OPC) on the status of the state aquaculture action plan, and (2) a draft timeline from the Department and staff for resuming efforts to develop best management practices plan requirements for leases.

Red Abalone Recovery

- **Risk Tolerance for Considering Limited Harvest Opportunities:** The Department presented historic fishery information for commercial and recreational landings over time, and the current status of various abalone species in California, including red abalone at San Miguel Island. The Department recommended a focus on statewide recovery, not harvest.
- **Extension of the Recreational Fishery Closure:** The Department reported on trends documenting continued large-scale decline of red abalone populations on the north coast, recognizing that small pockets observed in shallow water do not correspond to recovery but rather could be a potential source for restoration. The Department recommended extending the recreational closure indefinitely.

MRC provided a recommendation for both items under red abalone recovery.

Staff and Agency Updates – Marine Protected Areas (MPAs) and Regulation Change Petition Evaluation Process

- **2024 MPA Enforcement Statistics:** Law Enforcement Division (LED) Marine District provided a comprehensive presentation that synthesized MPA enforcement statistics for 2024 (Exhibit 2).
- **MPA Petition Evaluation Process and Timeline:** The Marine Region gave an update on MPA petition evaluation status and next steps, including a proposed process and timeline for evaluating and developing recommendations for MPA petitions in bin 2. At the July MRC meeting, the Department will present a draft evaluation framework and proposed petition groupings. Department bin 2 evaluations will occur between July and November, to support initial discussion of Department recommendations in November, followed by full Commission engagement and review (TBD). The interagency “Bin 2 Workgroup” (Department, Commission, and OPC staffs) will continue to meet regularly to coordinate and collaborate. See Exhibit 3.
- **SeaSketch California Demonstration:** Guest presenters (academic GIS developers from UC Santa Barbara) provided a demonstration of their SeaSketch California mapping and analytical platform, updated through OPC funding for the purpose of supporting visual and analytical evaluation of MPA petitions.

Staff and Agency Updates – Other Topics

- The Department Marine Region presented an update on an electronic reporting and monitoring pilot project, which includes testing the tools in the set gillnet fishery (Exhibit 4).

Staff Summary for April 16-17, 2025

- OPC staff provided updates on emergency funding for post-wildfire monitoring in Los Angeles, fishery investments, 30x30, and funding for MPA monitoring projects.
- Commission staff provided an update on recent outreach efforts related to the Coastal Fishing Communities Policy. Guest speaker Kate Fitzgerald, a graduate student at Scripps and a Commission intern last quarter, presented potential impacts of offshore wind on coastal fishing communities and offered recommendations.

MRC Recommendations

MRC developed four recommendations for Commission consideration related to red abalone, MRC meeting dates, and MRC work plan topics.

1. *Red Abalone Recovery*: Support the Department to: (1) Prioritize a focus on abalone recovery, rather than harvest opportunities; (2) continue to monitor the kelp restoration and management plan development process; and (3) build partnerships for abalone monitoring and recovery.
2. *Recreational Red Abalone Fishery Closure*: Support continuing the recreational red abalone fishery closure beyond the current sunset of April 1, 2026, as recommended by the Department. Schedule a rulemaking to commence in August 2025, to continue the recreational red abalone fishery closure by extending the sunset date for 10 years.
3. *July and November 2025 Meeting Dates*: Add a second day on July 16 and November 5, respectively, to ensure sufficient time for all proposed agenda items.
4. *Work Plan Topics*: Schedule updates for the July MRC meeting on aquaculture lease best management practices plans regarding a potential timeline for resumption, and on the draft state aquaculture action plan regarding its status and timeline for completion.

Committee Work Plan

The updated MRC work plan (Exhibit 1) outlines topics and timelines for Commission-referred items, including MRC-proposed changes.

New Topic

The Department recommends referring one new topic to MRC with a discussion in July 2025, related to the commercial bull kelp harvest regulations sunset date and whether to consider a potential extension before the regulations expire on January 1, 2026.

Completed Topics

Four completed topics are identified by staff for removal from the work plan as they were completed in November 2024 and advanced to the Commission for consideration:

- Market squid fishery management and fishery management plan review
- Kelp and algae commercial harvest regulations – sea palm (*Postelsia*)

Staff Summary for April 16-17, 2025

- Recreational crab trap gear options and trap validation for commercial passenger fishing vessels
- Recreational barred sand bass fishery regulations

Significant Public Comments

Recreational Red Abalone: An advocate for recreational fishing thanks co-chairs for their thoughtful discussion at the March 13, 2025 MRC meeting and supports a precautionary approach to managing the red abalone fishery, citing a lack of scientific data to support opening and challenges faced by the red abalone population. They agree with the MRC recommendation of a continued closure for the next ten years. Additionally, they encourage considering tribal rights before any general recreational allowances are discussed. (Exhibit 5)

Recommendation

Commission staff: Approve the MRC recommendations and approve the MRC work plan as reflected in Exhibit 1, including any changes identified during today's meeting.

Exhibits

1. [MRC work plan, updated April 9, 2025](#)
2. [LED Marine District presentation: 2024 MPA enforcement statistics](#)
3. [Marine Region presentation: MPA petition evaluation status and next steps](#)
4. [Marine Region presentation: Electronic reporting and electronic monitoring pilot](#)
5. [Letter from Anupa Asokan, Executive Director, Fish On, received April 3, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission approves the recommendations from the March 13, 2025 MRC meeting and approves changes to the work plan as discussed today.

Staff Summary for April 16-17, 2025

30B. Department Marine Region**Today's Item****Information** ☒**Action** ☐

Receive and discuss updates on items of note since the previous Commission meeting, including:

- I. *Recreational ocean salmon and Pacific halibut* regulations, to include automatic conformance to federal regulations and the potential for an ocean salmon “bubble fishery” at Pillar Point Harbor.
- II. *Recreational Dungeness crab*, for actions taken by the Department director to prohibit the use of crab traps in Fishing Zone 4 (Pigeon Point to Lopez Point) effective at 6:00 p.m. on April 15, 2025.

Summary of Previous/Future Actions (N/A)**Background****I. *Recreational Ocean Salmon and Pacific Halibut***

The Department's Marine Region is expected to provide verbal updates, including automatic conformance of annual recreational ocean salmon and Pacific halibut regulations to federal regulations, and follow up on the potential for a “bubble fishery” for pen-raised Mokelumne river salmon at Pillar Point Harbor as requested by the Commission in February.

II. *Recreational Dungeness crab*

This item is for public discussion of action taken by the director of the Department in the recreational Dungeness crab fishery to protect migrating whales.

Subsection 29.80(c) specifies rules for the use of crab traps, including provisions effective November 2021 authorizing the Department director, after consulting with the Commission president or designee, to prohibit the deployment and use of crab traps in order to protect humpback whales, blue whales and/or Pacific leatherback sea turtles when concentrations of these species meet specific numerical triggers. When the director implements a management action pursuant to subsection 29.80(c), they shall notify the Commission and request that the Commission schedule a public discussion of the management action at its next regularly scheduled meeting.

Today is the opportunity to discuss recent action taken in the recreational Dungeness crab fishery to prohibit use of crab traps from Pigeon Point to Lopez Point (Fishing Zone 4) effective at 6:00 p.m. on April 15, 2025. The Department anticipates the next risk assessment will take place in mid-April 2025.

A Department Marine Region news release includes actions for both recreational and commercial Dungeness crab fisheries, and information related to the risk assessment process and trap gear retrieval (Exhibit 3).

Staff Summary for April 16-17, 2025

Significant Public Comments

1. Supervisor Joey Borges, writing on behalf of the Del Norte County Board of Supervisors, strongly supports reopening the California ocean salmon fishery in 2025. In a letter to the Pacific Fishery Management Council, the board requests that economic, scientific, community and tribal impacts be considered when evaluating the reopening of this valuable fishery (Exhibit 1).
2. A recreational ocean fisher objects to the proposed “bubble fishery” near Half Moon Bay. The fisher argues that Mokelumne pen-raised fish are no different from hatchery-raised fish and that such a fishery would introduce geographic risks to Sacramento salmon stocks (Exhibit 2).

Recommendation (N/A)**Exhibits**

1. [Letter from Joey Borges, Chairman, Del Norte County Board of Supervisors, received February 25, 2025](#)
2. [Email from Steve Laviletta, received February 14, 2025](#)
3. [Department news release: CDFW Protects Returning Humpback Whales from Endangering Risk While Providing Continued Fishing Opportunities for Dungeness Crab, dated April 3, 2025](#)

Motion (N/A)

Staff Summary for April 16-17, 2025

31A. Administrative Items - Legislative Report**Today's Item**Information ☒Action ☐

Receive updates on legislative activity and consider providing direction to staff on potential actions.

Summary of Previous/Future Actions (N/A)**Background**

Staff has identified state legislation that may affect the Commission's resources and workload, or may be of interest to commissioners, and provides the status of those bills during this legislative session as of April 7, 2024. The Department has provided a report on active bills it is tracking during the legislative session (Exhibit 1).

At any meeting, the Commission may direct staff to provide information to, or share concerns with, bill authors. Today is an opportunity for the Commission to provide direction to staff concerning proposed legislation.

Legislative Calendar Highlights

Commission staff has identified state legislation that may affect the Commission's resources and workload during this legislative session, as of April 7, 2025. The Department has provided a report on active bills it is tracking during the legislative session (Exhibit 1).

The legislature reconvened for the second half of the 2024-2025 session on January 6, 2025. February 21 was the last day for new bills to be introduced for the session and, on April 10 the legislature began spring recess. Other calendar highlights include:

- April 21: Legislature reconvenes from spring recess
- May 16: Last day for policy committees to meet prior to June 9
- June 6: Last day for bills to be *passed out of the house of origin*
- June 9: Committee meetings may resume
- June 15: Budget Bill must be passed by *midnight*
- July 18: Last day for *policy committees* to meet and report bills
- July 18: *Summer recess* begins at the end of this day's session if the budget bill has been passed

Bills Introduced During the 2024-2025 Session

Staff has identified 3 senate bills (SB) and 11 assembly bills (AB) that may affect the Commission's authority or workload, or may be of potential interest to the Commission.

- SB 609 (Laird) – Fish: commercial fishing. Status: 4/01/2025 - Set for hearing April 8.
This bill would require certain landing receipts and records of fishing activities to be confidential and to not be public records, except for fish business identification numbers,

Staff Summary for April 16-17, 2025

fish business names, commercial fishing license numbers, commercial fisher names, vessel registration identification numbers, and vessel names, as provided.

- SB 718 (Dahle) – Hunting and sport fishing licenses: reduced fees. Status: 4/04/2025 - Set for hearing April 22.

Current law requires the Department to issue reduced fee hunting and sport fishing licenses to specified individuals as provided. This bill would require the Department to issue a reduced fee hunting license to a qualified recipient who has not been convicted of a violation of the Fish and Game Code and has provided adequate documentation to the Department, as specified.

- SB 818 (Alvarado-Gil) – Mountain lions: pilot program: permitted houndspersons. Status: 4/04/2025 - Set for hearing April 22.

This bill would require the Department to, by January 1, 2027, establish a pilot program known as “Tree and Free” in the County of El Dorado in order to collect data on the efficacy of authorizing permitted private houndspersons to proactively haze mountain lions deemed to be a potential threat to public safety, livestock, or other domestic animal by the Department, animal damage control officer, or local enforcement agency. The bill would require the program to be operative for five years from the date of commencement and, once concluded, would require the Department to, no later than January 1, 2033, provide a report to the legislature and the Commission on the efficacy the program and feasibility on expanding the program to other areas, as specified.

- AB 454 (Kalra) – Migratory birds: California Migratory Bird Protection Act. Status: 3/27/2025 - Re-referred to Committee on Appropriations.

This bill would, indefinitely, make unlawful the taking or possessing of any migratory bird, as designated in the federal act before January 1, 2025, any additional migratory nongame birds that may be designated in the federal act after that date, or any part of those migratory nongame birds, except as provided.

- AB 764 (Gonzalez, Jeff) – Birds and mammals: nongame birds. Status: 3/25/2025 - From committee: Do pass and re-refer to Committee on Appropriations (Ayes 13. Noes 0.) (March 25). Re-referred to Committee on Appropriations.

This bill would allow mute swans to be taken or possessed under the same circumstances as other listed nongame birds.

- AB 807 (Dixon) – Conservation and mitigation bank: marine artificial reefs. Status: 4/04/2025 – In committee: Set, first hearing. Hearing canceled at the request of author.

This bill would expand the definition of “conservation bank” and “mitigation bank” to include marine artificial reefs. The bill would authorize a person to, after completion of a full environmental review in compliance with applicable California and federal laws and regulations, create a marine artificial reef for purposes of establishing a mitigation or conservation bank.

Staff Summary for April 16-17, 2025

- AB 846 (Connolly) – Endangered species: incidental take: wildfire preparedness activities. 3/28/2025 - Re-referred to Committee on Water, Parks & Wildlife.

This bill would authorize a city, county, city and county, special district, or other local agency to submit to the Department a wildfire preparedness plan to conduct wildfire preparedness activities on land designated as a fire hazard severity zone, as defined, that minimizes impacts to wildlife and habitat for candidate, threatened, and endangered species. The bill describes what would be required to include in a wildfire preparedness plan, and authorize the Department to impose a fee on a local agency for the cost of reviewing a wildfire preparedness plan. The bill would require the Department to notify the local agency within 90 days of receipt if an incidental take permit or other permit is needed, or if there are other considerations, exemptions, or streamlined pathways that the wildfire preparedness activities qualify for. The bill would require the Department to provide the local agency with guidance that includes, among other things, a description of measures to avoid, minimize, and fully mitigate the take of candidate, threatened, and endangered species.

- AB 892 (Schultz) – Captive animals: direct contact: prohibition. Status: 4/02/2025 - Re-referred to Committee on Water, Parks & Wildlife.

This bill would prohibit a person from allowing any member of the public to come into direct contact with wild animals held in captivity under a restricted species permit. The bill would provide that this prohibition does not apply to direct contact between those animals and certain individuals. A person who violates this prohibition would be subject to certain civil penalties, and any restricted species permit for the animal would be subject to immediate suspension or revocation by the Department.

- AB 1024 (Harabedian) – Department of Fish and Wildlife: San Gabriel Valley Bear Management and Community Safety Act. Status: 3/10/2025 - Referred to Com. on Water, Parks & Wildlife.

Would require, on or before January 1, 2027, the Department to develop a regional plan specific to cities located within the San Gabriel Valley in the County of Los Angeles to address issues relating to bears in the community. The bill would require the plan to include various components, including, among other things, an overview of the behaviors of the bears in the San Gabriel Mountains, and measurable performance goals for reducing bear encounters within the cities located in the San Gabriel Valley. The bill would require the Department to tag and track any bear that enters a residential neighborhood in a city located within the San Gabriel Valley using innovative technologies, as specified.

- AB 1038 (Hadwick) – Bears: hunting: use of dogs. Status: 3/10/2025 - Referred to Committee on Water, Parks & Wildlife.

This bill would require the Commission to establish seasons during which a person would be authorized to allow dogs to pursue a bear if the person does not injure or kill the bear or allow the bear to be injured or killed while engaging in the activity, as specified.

Staff Summary for April 16-17, 2025

- AB 1056 (Bennett) – Gill nets: permits. Status: 3/18/2025 - Re-referred to Com. on Water, Parks & Wildlife.

This bill would prohibit the Department from renewing a permit unless at least 1,000 pounds of halibut or 1,000 pounds of white seabass were landed under the permit between January 1, 2020, and December 31, 2024, inclusive.

- AB 1089 (Carillo) – Western Joshua Tree Conservation Act: industrial projects and commercial projects. Status: 3/25/2025 - Re-referred to Com. on Water, Parks & Wildlife.

This bill would authorize the department to enter into an agreement with any city to delegate to the city the ability to authorize the taking of western Joshua trees associated with developing commercial and industrial projects. The bill would, relative to other project types subject to delegated local mitigation authority, limit the bases for commercial or industrial projects to pay specified fees in lieu of satisfying the mitigation obligation, as provided.

- AB 1169 (Gonzalez, Jeff) – Wildlife grants: Shared Habitat Alliance for Recreational Enhancement (SHARE) program. Status: 3/10/2025 - Referred to Com. on Water, Parks & Wildlife.

Current law authorizes the Department, as part of the SHARE program, to make grants to, or enter into agreements with, nonprofit organizations, governmental entities, or any other entities for purposes of carrying out the SHARE program. This bill would instead require the Department to make those grants to, or enter into agreements with, the above described entities, including a nonprofit conservation organization, when the department finds the grants or agreements are necessary for carrying out the purposes of the SHARE program.

- AB 1456 (Bryan) – California Environmental Quality Act: vegetation fuel management project exemption. Status: 3/13/2025 - Referred to Committee on Natural Resources.

This bill would exempt from CEQA a vegetation fuel management project, as defined, undertaken or funded by a public agency, or the adoption of an ordinance requiring the implementation of a vegetation fuel management project. The bill would require a lead agency that determines to carry out or approve an activity that is within the exemption to file a notice of exemption with the Office of Land Use and Climate Innovation, as specified.

Legislative bills, their history and their status, may be found at www.leginfo.legislature.ca.gov.

Significant Public Comments (N/A)

Recommendation (N/A)

Exhibits

1. [Department legislative report, dated April 7, 2025](#)

Staff Summary for April 16-17, 2025

Motion (N/A)

Staff Summary for April 16-17, 2025

31B. Rulemaking Timetable Updates**Today's Item****Information** ☐**Action** ☒

Review and potentially approve changes to the perpetual timetable for anticipated regulatory actions.

Summary of Previous/Future Actions

- Commission approved rulemaking timetable December 11-12, 2024
- **Today consider approving changes to the rulemaking timetable April 16-17, 2025**

Background

This is a standing agenda item for staff and the Department to request changes to the Commission's rulemaking timetable (Exhibit 2), confirm changes made by the Commission during this meeting, and highlight minor changes made by staff.

The Department requests three changes to the rulemaking timetable (Exhibit 1):

- Add a "Striped Bass Harvest Size Limits" rulemaking to amend sections 5.75 and 27.85. This rulemaking addresses a regulation change petition granted by the Commission to establish a minimum length and maximum size limit for sport take of striped bass. The proposed rulemaking schedule is notice in June 2025, discussion in August 2025, and adoption in October 2025.
- Add a "Golden Mussel – Restricted Species" rulemaking to amend Section 671. This regular rulemaking is necessary to maintain the current emergency regulations for golden mussel once the emergency regulations expire and to add other species, including European green crab, to the restricted species list. The proposed rulemaking schedule is notice in August 2025 and discussion and adoption in October 2025.
- Add a "Big Game Preference Points" rulemaking to amend section 708.14. This rulemaking is necessary to address concerns regarding administration in preference point reinstatement and refunds for big game hunt zones when public land closures occur due to wildfires. The proposed rulemaking schedule is notice in August 2025, discussion in October 2025, and adoption in December 2025.

Commission staff requests four changes to the rulemaking timetable:

- Remove the "European Green Crab (CFGC Petition 2017-006)" rulemaking from the "future rulemakings" table. This petition for regulation change will be incorporated into the "Golden Mussel – Restricted Species" rulemaking requested by the Department.
- Add a "Marine Protected Areas (MPAs)" rulemaking to the future rulemakings table to amend Section 632. This rulemaking will address actions granted during the MPA regulation change petition review process for "bin 1" petitions as part of the first decadal management review for California's network of MPAs. Also, add a footnote indicating that this future rulemaking "considers granted actions from petitions 2023-22MPA"

Staff Summary for April 16-17, 2025

(actions 1, 2, 4 and 6), 2023-25MPA (actions 1 and 3), 2023-26MPA (actions 2, 3 and 4), and 2023-31MPA (actions 1 and 2)

- Add a “Lands Pass – Hope Valley Wildlife Area” rulemaking to the future rulemakings table. This rulemaking will incorporate the granted petition for regulation change 2018-016. Add a footnote indicating that this future rulemaking “considers CFGC Petition 2018-016(a).”
- Switch the scheduled Commission meeting days in June 2025 to reflect marine items on the first day and wildlife and inland fisheries items on the second day.

Significant Public Comments (N/A)**Recommendation**

Commission staff: Approve the proposed changes to the rulemaking timetable as identified in this staff summary and Exhibit 2, and any other changes identified during this meeting.

Department: Approve the proposed changes to the rulemaking timetable as identified in Exhibit 1.

Exhibits

1. [Department memo, received April 10, 2025](#)
2. [“Perpetual Timetable for Regulatory Actions,” dated April 11, 2025](#)

Motion

Moved by _____ and seconded by _____ that the Commission approves the proposed changes to the rulemaking timetable as recommended and discussed today.

Staff Summary for April 16-17, 2025

31C. Administrative Items - Future Meetings and New Business**Today's Item**Information ☐Action ☒

This is a standing agenda item to review logistics and approve draft agenda items for the next Commission meetings, consider any changes to approved meeting dates or locations, or introduce new business for a future meeting agenda.

Summary of Previous/Future Actions (N/A)**Background*****Upcoming Commission Meetings***

The next Commission meetings are scheduled for May 14, 2025 as a teleconference and June 11-12, 2025 in Sacramento. The May 14 teleconference has in-person options in Trinidad, Sacramento, St. Helena, Santa Cruz and La Jolla where commissioners will be located.

The June meeting is unusual in that, to avoid marine subjects overlapping with the Pacific Fishery Management Council meeting, topics for the two Commission meeting days will be reversed such that marine items will be on the first day, and wildlife and inland fisheries items will be on the second day; administrative items will be distributed across both days.

For all Commission and committee meetings, we continue to provide the ability to participate via webinar and phone, in addition to physical meeting locations. Potential agenda items for both meetings are provided in Exhibit 1 for consideration and potential Commission approval.

Approved Meeting Dates and Locations

Currently, Commission and committee meetings are scheduled for the Sacramento area through December 2025 due to ongoing travel restrictions and budget constraints. Once the 2026-27 budget is approved, staff will assess the feasibility of holding meetings in other parts of the state again.

Significant Public Comments (N/A)**Recommendation**

Commission staff: Approve agenda items for the May 14, 2025 and June 11-12, 2025 meetings as presented in Exhibit 1, as amended during this meeting.

Exhibits

1. [Potential agenda items for May 14 and June 11-12, 2025 Commission meetings](#)

Motion

Moved by _____ and seconded by _____ that the Commission approves the draft agenda items for the May 14, 2025 and June 11-12, 2025 Commission meetings, as amended during this meeting.

Staff Summary for April 16-17, 2025

32. General Public Comment for Items Not on the Agenda**Today's Item****Information** ☒**Action** ☐

Receive public comment regarding topics within the Commission's authority that are not included on the agenda.

Summary of Previous/Future Actions

- **Today receive verbal requests and comments** **April 16-17, 2025**
- Consider granting, denying, or referring **June 11-12, 2025**

Background

This item is to provide the public an opportunity to address the Commission on topics not on the agenda. Staff may include written materials and comments received prior to the meeting as exhibits in the meeting binder (if received by the written comment deadline), or as supplemental comments at the meeting (if received by the supplemental comment deadline).

General public comments are categorized into two types: (1) requests for non-regulatory action and (2) informational-only comments. Under the Bagley-Keene Open Meeting Act, the Commission cannot discuss or take action on any matter not included on the agenda, other than to schedule issues raised by the public for consideration at future meetings. Thus, non-regulatory requests generally follow a two-meeting cycle (receipt and direction); the Commission will determine the outcome of non-regulatory requests received at today's meeting at the next regularly scheduled Commission meeting, following staff evaluation (currently June 11-12, 2005).

Significant Public Comments (N/A)**Recommendation**

Commission staff: Consider whether to add any future agenda items to address issues that are raised during public comment.

Exhibits

1. See exhibits for Agenda item 2

Motion (N/A)

Staff Summary for August 14-15, 2024

*For Background Purposes Only***6. Commercial California Halibut and White Seabass Set Gill Net****Today's Item**Information ☐Action ☒

Consider adopting proposed amendments to regulations for commercial California halibut and white seabass gill net fisheries.

Summary of Previous/Future Actions

- | | |
|--|---------------------------|
| • Marine Resources Committee (MRC) vetting | 2022 – 2023, various; MRC |
| • MRC discussion and recommendation | November 16, 2023; MRC |
| • Notice hearing | April 17-18, 2024 |
| • Discussion hearing | June 19-20, 2024 |
| • Today's adoption hearing | August 14-15, 2024 |

Background

In April 2024, the Commission authorized publishing a notice of intent to add regulations related to commercial California halibut and white seabass set gill nets. The notice was published in the California Regulatory Notice Register on May 31, 2024 (Z2024-0521-01).

The proposed regulation is the initial phase of introducing management measures into the California set gill net fishery, with the objectives of reducing bycatch impacts on unintended marine life and improving data collection to fill data gaps through:

1. *establishing a maximum net service interval (soak time)*, limiting the time set gill nets remain set to reduce bycatch mortality;
2. *requiring gear marking*, adding colored straps for easier identification of nets from California; and
3. *establishing maximum mesh depth (net height)* limits, to target specific fish species while reducing unintended bycatch.

More detailed information on the proposed regulation and its development can be found in Exhibit 1.

The new regulation was noticed with options for a maximum net service interval requirement (range of 24-48 hours) and gear marking color for the required nylon strap (three color options). At its June 2024 meeting, the Department recommendation the Commission select a maximum net service interval of 36 hours and select the color orange for required gear markings (Exhibit 4).

Update

Following the discussion hearing, various non-substantive edits were made to the proposed regulatory language (Exhibit 3) to fix grammatical mistakes and correct Title 14 terminology. These changes were without regulatory effect and therefore did not require a subsequent public notice.

Staff Summary for August 14-15, 2024
For Background Purposes Only

The Department has also provided a pre-adoption statement of reasons with a summary and response to all public comments received during the notice period (exhibits 5 and 6). The Department does not propose any changes to its recommended regulations based on the comments.

Significant Public Comments

1. Several NGOs signed on to a letter in support of the proposed regulations, calling for a 24 hour maximum service interval and suggesting future refinements to gear marking requirements.
2. Twenty-eight public comments received during the notice period are summarized in Exhibit 6.

Recommendation

Commission staff: Adopt the proposed regulations as recommended by the Department, with the Department-preferred options for service interval and gear marking based on rationale in Exhibit 4.

Department: Adopt the proposed regulations in Exhibit 3 with a maximum service interval of 36 hours and an orange nylon strap as a required gear marking.

Exhibits

1. Staff summary from April 17-18, 2024 Commission meeting (*for background purposes only*)
2. Initial Statement of Reasons
3. Revised proposed regulatory language
4. Department memo with recommendations, received June 6, 2024
5. Department memo transmitting Pre-adoption Statement of Reasons (PSOR) and summary and responses to comments received, received August 2, 2024
6. PSOR, including summary and responses to public comments received
7. Email from Scott Webb, received August 1, 2024

Motion

Moved by _____ and seconded by _____ that the Commission adopts the proposed regulations to add Section 174.1 related to commercial California halibut and white seabass set gill nets, with a *required maximum service interval of 36 hours and orange-colored gear marking.*

OR

Moved by _____ and seconded by _____ that the Commission adopts the proposed regulations to add Section 174.1 related to commercial California halibut and white seabass set gill nets, with a *required maximum service interval of ____ hours and orange-colored gear marking.*

Description of Specific Edits to the Regulatory Text

Section 174.1(a)(1): Delete the original language and re-write with rearranged sentence structure for clarity.

Section 174.1(a)(1): Add "...the permittee may request a waiver for exemption to comply by allowing another set gill net permittee to retrieve their nets," to clarify that the scope of the exemption is to allow for an alternate compliance mechanism to the service interval.

Section 174.1(a)(1)(A): Add "...All requests for an exemption to the set gill net service interval under subsection (a)(1) shall be evaluated by the Department on a case-by-case basis," to ensure flexibility for the Department when considering and assessing the various circumstances resulting in undue hardship exemption requests.

Section 174.1(a)(2): Add clarifying language – "...as described in subsection (a)(2)(A)..." and "...if the conditions in subsection (a)(2)(B) are met..." - in the description of the unsafe weather condition exemption linking the description to the definition and processes for claiming the waiver in the subsections below.

Section 174.1(a)(2): Change "...a permittee may be exempt..." to "...a permittee shall be exempt..." when defined weather conditions are met and the permittee requests an unsafe weather condition exemption.

Section 174.1(a)(2): Add "The Department may grant an exemption when subsection (a)(2)(B) conditions are not met if, considering all weather circumstances on a case-by-case basis, the permittee's safety may be at risk" to allow for unsafe weather exemptions to be granted when circumstances may still be unsafe even though they do not precisely fit the unsafe weather definition in the regulation.

Section 174.1(a)(2): Add "After claiming an exemption, a permittee may be cited by the Department for a violation of subsection (a) if weather conditions were not unsafe as defined in subsection (a)(2)(B) or if the Department did not otherwise authorize an exemption" to ensure enforceability and accountability if it is discovered that a permittee was granted or claimed an unsafe weather condition exemption illegitimately.

Section 174.1(a)(3)(A): Add a semicolon after "approved exemption" and before "or."

Section 174.1(b): change "...all set gill nets shall be marked with an orange-colored 1-inch-wide nylon strap which shall be woven into the corkline at intervals..." to "...all set gill nets shall be marked with a series of orange-colored 1-inch-wide nylon straps which shall be woven into the headrope at intervals..." to clarify that the required gear marking is a series of straps – as illustrated in the initial statement of reasons – rather than a single strap. Also replaces the term "corkline" for the more modern and commonly used term "headrope."

Revised Proposed Regulatory Language

Section 174.1, Title 14 CCR, is added to read:

§174.1. Set Gill Net Service Interval, Gear Marking and Mesh Depth

(a) Set Gill Net Service Interval: Every set gill net shall be raised, cleaned, serviced, and emptied at intervals not to exceed 48 hours, and no net shall be abandoned in the waters of this state.

~~(1) Undue Hardship Exemption — A permittee may request a waiver for exemption from the set gill net service interval requirement described in subsection (a) if the permittee cannot comply due to a major mechanical failure or undue hardship resulting from circumstances beyond the control of the permittee.~~

(1) Undue Hardship Exemption – If a permittee cannot comply with the set gill net service interval requirement described in subsection (a) due to a major mechanical failure or undue hardship resulting from circumstances beyond the control of the permittee, the permittee may request a waiver for exemption to comply by allowing another set gill net permittee to retrieve their nets.

(A) Waiver Request: The permittee shall request a waiver from the Department by sending an email to LRBCOMM@wildlife.ca.gov prior to the end of the service interval. The permittee's email request must include all of the following in order to be considered by the Department: (1) the permittee's general gill net permit number, (2) circumstances explaining the undue hardship or mechanical failure that prevent the permittee from complying, (3) the retrieving individual's general gill net permit number, and (4) coordinates indicating location of the nets. The permittee shall comply with the set gill net service interval unless the Department grants the waiver request. All requests for an exemption to the set gill net service interval under subsection (a)(1) shall be evaluated by the Department on a case-by-case basis.

(B) Waiver Compliance: All permittees shall follow all terms and conditions of the waiver. The waiver may include conditions such as time restrictions, landing prohibitions, or any other conditions the Department deems necessary. The waiver shall be null and void upon violation of the waiver terms and conditions. A copy of the waiver approved by the Department shall be onboard the retrieving vessel.

(2) Unsafe Weather Condition Exemption - Unsafe Weather Conditions: Upon notification to the Department as described in subsection (a)(2)(A), a permittee ~~may~~ shall be exempt from the set gill net service interval requirement described in subsection (a) due to unsafe weather conditions at sea if the conditions in subsection (a)(2)(B) are met. The Department may grant an exemption when subsection (a)(2)(B) conditions are not met if, considering all weather circumstances on a case-by-case basis, the permittee's safety may be at risk. The permittee shall raise, clean, and service

all set gill nets for which they claim an exemption within 24 hours after the end of the unsafe weather conditions. After claiming an exemption, a permittee may be cited by the Department for a violation of subsection (a) if weather conditions were not unsafe as defined in subsection (a)(2)(B) or if the Department did not otherwise authorize an exemption.

(A) Department Notification: The permittee shall notify the Department of the unsafe weather conditions by sending an email to gillnetnotifications@wildlife.ca.gov prior to the end of the service interval. The permittee's email request shall describe (1) the unsafe weather conditions which meet the definition below and (2) the affected coastal waters zone.

(B) Unsafe Weather Conditions Defined: Weather conditions at sea are considered unsafe if the National Weather Service issues a Small Craft Advisory or other advisory predicting sustained winds greater than 25 knots. The Small Craft Advisory or other qualifying advisory shall apply to the same coastal waters zone where a set gill net is located, or the same coastal waters zone where the vessel must transit to reach a set gill net. The Small Craft Advisory or other qualifying advisory must also have been declared on the same calendar day that the set gill net service interval ends.

(3) Abandoned Set Gill Nets - It is unlawful to abandon a set gill net. Abandoned set gill nets may be seized by any person authorized to enforce these regulations or their authorized agent. A set gill net is abandoned if:

(A) a permittee leaves the set gill net in the water for 7 consecutive days and during that time fails to raise, clean, service, and empty the set gill net without an approved exemption; or

(B) the valid, required gear markings are not present or legible on the set gill net.

(b) Gear marking: In addition to the requirements in Fish and Game Code Section 8601.5, starting January 1, 2026, all set gill nets shall be marked with ~~an~~ a series of orange-colored 1-inch-wide nylon ~~strap straps~~ which shall be woven into the ~~corkline~~ headrope at intervals not to exceed every 20 fathoms. Each strap must contain the fisherman's identification number and hang a minimum of 1 foot in length to uniquely identify the gear as a California set gill net.

(c) Mesh depth: Gill nets used to take white seabass with meshes of a minimum length of six inches shall be no more than 50 meshes deep. Gill nets used to take California halibut with meshes of a minimum length of 8.5 inches shall be no more than 25 meshes deep.

Note: Authority cited: Sections 7085 and 8682, Fish and Game Code.

Reference: Sections 1050, 1700, 7056, 8026, 8568, 8573, 8574, 8601, 8601.5, 8604, 8609, 8623, 8625, 8626, 8630, 8680 and 8681, Fish and Game Code.

Committee Staff Summary for July 17-18, 2024 MRC

For background purposes only

6. Commercial Sea Urchin Fishing

Today's Item

Information ☐

Action ☒

Receive and discuss Department findings and recommendations for proposed changes to commercial urchin regulations, and potential committee recommendation.

Summary of Previous/Future Actions

- | | |
|--|------------------------------|
| • Petition 2023-04 submitted by California Sea Urchin Commission (CSUC) | June 14-15, 2023 |
| • Commission referred petition to Marine Resources Committee (MRC) and Department for review | August 22-23, 2023 |
| • Received and discussed Department recommendations for changes to commercial urchin fishing regulations | March 19, 2024; MRC |
| • Today receive and discuss Department recommendations and potential MRC recommendation | July 17-18, 2024; MRC |

Background

Since the 1970s, sea urchins (primarily red) have been commercially harvested throughout California for “uni,” a delicacy prepared from urchin gonads. Section 9054 of the California Fish and Game Code authorizes the Commission to set the conditions for issuing commercial sea urchin diving permits to prevent overutilization of sea urchin and “...to ensure efficient and economic operation of the fishery...” on both a statewide basis and in specific geographic areas.

Current regulations for commercial sea urchin harvest are regionally-based, with differing regulations in northern and southern California (divided by the Monterey/San Luis Obispo county management line). In addition, management recommendations are periodically provided by CSUC, a statutory body established within the California Food and Agricultural Code in 2002 to “...ensure a reliable, sustainable supply of sea urchin products to consumers and to enhance California’s sea urchin industry performance through research funding, supporting industry standards and marketing, and promoting responsible fishery management recommendations.”

In June 2023, CSUC submitted a regulation change petition (2023-04) to propose changes to the fishery in northern California. Specifically, the petition requests to: (1) Remove Friday as a prohibited commercial urchin fishing day between June 1 and October 1 in northern California; and, (2) remove the commercial urchin fishing prohibition at South Caspar Point, Mendocino County, which was closed in 1989 to allow for sea urchin refuge and research endeavors (see Exhibit 1 for petition and CSUC rationale). In August 2023, the Commission referred the petition to MRC for discussion, supported by Department evaluation and input.

At the March 2024 MRC meeting, the Department presented an overview of the petitioned changes to commercial sea urchin regulations, the Department’s review of the proposed changes, and potential next steps. The Department also introduced potential additional changes related to creating a new daily sea urchin permit — as requested by urchin divers — and

Committee Staff Summary for July 17-18, 2024 MRC

For background purposes only

changes needed to enhance clarity, such as size limit measuring methods. MRC expressed support for further development of the full scope of proposed regulatory options as proposed in Petition 2023-04 and by the Department, and to return to today's meeting for a final recommendation.

Update

Since March, the Department has continued collaborating with CSUC to develop proposed options. Consistent with MRC direction, today the Department will present proposed regulation changes in four categories:

1. Develop a new daily sea urchin crew permit.
2. Remove Friday as a prohibited day in northern California (from petition).
3. Remove the commercial closure at South Caspar Point (from petition; see below for three options).
4. Make other changes for clarity.

For the commercial sea urchin fishing closure at South Caspar Point, the Department has identified three options for discussion:

- *Option 1:* Maintain the closure until the sunset date of April 1, 2029 as specified in regulation (*status quo*).
- *Option 2:* Remove the closure and open the area to commercial sea urchin fishing immediately
- *Option 3:* Reduce the closure area to only include the northeast bay until April 1, 2029 (*Department-preferred*)

Option 3 is preferred by the Department because it restores commercial sea urchin fishing in most of the previous closure area but maintains the closure in those areas of the cove with active kelp restoration projects that are anticipated to continue until April 1, 2029.

The Department supports scheduling a rulemaking and, if MRC concurs, seeks MRC guidance on the options for the South Caspar Point closure area. MRC could recommend a single one of the three options to advance in a future rulemaking, or could recommend the Commission schedule notice with more than one option. Today is an opportunity to clarify and discuss the options and consider an MRC recommendation for the Department's proposed regulation changes (proposed for notice in December 2024).

If MRC recommends scheduling a rulemaking, the Department will continue working with CSUC to refine the daily sea urchin crew permit concepts to build into proposed regulations.

Significant Public Comments (N/A)

Recommendation

Commission staff: After discussing Department options and trade-offs, recommend the Commission support granting petition 2023-04 with either full or partial lifting of South Caspar

Committee Staff Summary for July 17-18, 2024 MRC*For background purposes only*

Point closure area. Develop a recommendation to schedule a rulemaking to consider proposed changes to commercial urchin regulations as recommended by the Department, specifying the option(s) to include for the South Caspar Point closure area.

Department: Provide feedback on Department options to address the commercial sea urchin fishing closure at South Caspar Point (Option 3 preferred), and support scheduling a rulemaking to consider proposed changes to commercial urchin fishing regulations on a timeline commencing with notice in December 2024, as reflected in Exhibit 2.

Exhibits

1. Petition 2023-04
2. Department presentation

Committee Direction/Recommendation

The Marine Resources Committee recommends that the Commission grant Petition 2023-04 *in concept* for consideration in a rulemaking, using [option 1, 2 or 3 OR options 2 and 3] as proposed by the Department for lifting the commercial urchin closure at South Caspar Point, Mendocino; and schedule a rulemaking to consider potential changes to commercial sea urchin regulations, as recommended by the Department, to commence with notice in December 2024.

Staff Summary for February 12-13, 2025
For background purposes only

20. Commercial Take of Red and Other Sea Urchin

Today's Item

Information ☐

Action ☒

Consider authorizing publication of notice of intent to amend regulations for commercial take of red and other sea urchin.

Summary of Previous/Future Actions

- | | |
|---|-----------------------------|
| • Petition 2023-04 submitted by California Sea Urchin Commission | June 2023 |
| • Referred to Marine Resources Committee (MRC) for vetting and Department for review and recommendation | August 2023 |
| • MRC vetting and recommendation | July 18, 2024; MRC |
| • Approved MRC recommendation to advance regulation changes | August 14-15, 2024 |
| • Today's notice hearing | February 12-13, 2025 |
| • Discussion and adoption hearing | April 16-17, 2025 |

Background

The Department requests changes to commercial sea urchin fishing regulations, as detailed in a draft initial statement of reasons (ISOR) and draft proposed regulatory language (exhibits 3 and 4), to improve fishing opportunities and improve clarity and efficiency of existing regulations. The proposed regulations incorporate changes from regulation change petition #2023-04, submitted by the California Sea Urchin Commission (CSUC) and granted by the Commission for consideration. (Exhibit 1 provides additional background.)

The proposed amendments reflect Department discussions, incorporating input from CSUC, the Nature Conservancy, and Reef Check California. The proposed amendments also address new requirements under California Fish and Game Code Section 9054.5, established through Senate Bill 500 (Chapter 876, Statutes of 2023), and MRC's July 2024 recommendation that was approved by the Commission in August 2024.

Proposed Regulatory Changes

The proposed changes will: (1) allow commercial fishermen to assist urchin divers, (2) remove a Friday fishing prohibition, (3) remove part of a sea urchin closure, and (4) increase clarity and efficiency in the regulations.

Allow Commercial Fishermen to Assist Sea Urchin Divers

Currently, only sea urchin diving permit holders (limited entry, through a lottery system) can take and sell sea urchin commercially. Sea urchin crewmember permit holders (open access) can assist a sea urchin diving permittee, but cannot dive to harvest sea urchins; these permit holders earn points to qualify for entering the diving permit lottery. The proposed regulation

Staff Summary for February 12-13, 2025

For background purposes only

allows anyone with a commercial fishing license to assist a sea urchin diver; however, assistants would not be eligible for the diving permit lottery.

Remove Friday Fishing Prohibition in the Northern Fishery June-October

Current regulations prohibit commercial red sea urchin harvest on Fridays, Saturdays and Sundays from June through October north of the Monterey-San Luis Obispo county line, and on Saturdays and Sundays from June through October south of that line. The proposed change removes the Friday prohibition for the northern fishery, creating a consistent statewide seasonal closure. The proposed change aligns with CSUC's petition #2023-04.

Remove a Portion of South Caspar Point Sea Urchin Closure

Commercial sea urchin fishing is currently prohibited at South Caspar Point, Mendocino County, a closure established in 1989. The proposal is to eliminate 89% of the closed area as the adjacent Point Cabrillo State Marine Reserve, established in 2012, makes the urchin closure redundant. A small portion of Caspar Cove would remain closed, to avoid interfering with ongoing kelp restoration research, including unlimited recreational purple sea urchin harvest, until those recreational regulations expire on April 1, 2029. The proposed change is derived from CSUC's petition, as modified, consistent with the MRC recommendation.

Increase Clarity and Efficiency in the Regulations

The proposed regulations add provisions to:

- Clarify permitted activities under each sea urchin permit type
- Hold all participants on a joint sea urchin trip accountable for violation on board the vessel
- Clarify sea urchin measurement methods
- Distinguish permit-related regulations from fishery-related regulations by separating them into separate sections of Title 14, with corresponding renumbering

Commission Staff-Proposed Changes

After receiving the draft ISOR and proposed regulatory language, staff identified necessary, non-substantive changes to commercial sea cucumber regulations (in Section 128) and the commercial dive log. The changes are necessary for consistency with the proposed, renumbered subsection, which is cross-referenced, and to update the Commercial Dive Fishing Log form for clarity (i.e., update form number, provide separate fields for "port" and "dealer", add instructions for requesting new logbooks, update example of completed form, and other minor edits). See Exhibit 7 for more details.

Significant Public Comments

The Giant Kelp Restoration Project (Exhibit 8) requests the Commission increase the number of fishing days per week (specific number not provided). In addition, they request multiple regulatory changes, which are not included in the ISOR: remove the existing red sea urchin size limit; allow new entrants into the sea urchin fishery; reduce the permit fee; allow regenerative sea urchin fishing on the California central coast; allow new entry into a select

Staff Summary for February 12-13, 2025*For background purposes only*

portion of the commercial fishery to focus on kelp restoration; provide guidance on disposal and/or ranching of urchin shells and establish royalties payable to CSUC; and create new “regenerative take” and “tribes and tribal community take” categories in regulation.

Recommendation

Commission staff: Authorize staff to publish notice of the Commission’s intent to amend the commercial sea urchin fishing regulations as recommended by the Department, described in exhibits 3 and 4, with the addition of non-substantive changes to Section 128 Sea Cucumber and the Commercial Dive Fishing Log, as reflected in Exhibit 7.

Department: Authorize staff to publish notice of the Commission’s intent to amend the commercial sea urchin fishing regulations as described in the draft ISOR and draft proposed regulatory language (exhibits 3 and 4).

Exhibits

1. Staff summary from Agenda Item 6, July 18, 2024 MRC meeting (*for background purposes only*)
2. Department memo, received January 17, 2025
3. Draft ISOR
4. Draft proposed regulatory language
5. Draft economic and fiscal impact statement (STD 399)
6. Department presentation
7. Additional proposed changes to Section 128 and Commercial Dive Fishing Log
8. Email from Keith Rootsaert, received January 30, 2025

Motion

Moved by _____ and seconded by _____ that the Commission authorizes publication of a notice of its intent to amend Section 120.7, Section 128 and form DFW 120.7, and to add Section 120.8 related to commercial take of sea urchin and sea cucumber, as reflected in the initial statement of reasons and updated pursuant to Exhibit 7.

Memorandum

Received January 17, 2025
Original on file

Date: January 13, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Initial Statement of Reasons for the February 12-13, 2025 Fish and Game Commission meeting to Amend Section 120.7 and add Section 120.8, Title 14, California Code of Regulations, Re: Commercial Sea Urchin**

The Department of Fish and Wildlife (Department) requests the Fish and Game Commission (Commission) authorize publishing notice of its intent to amend Section 120.7 and add Section 120.8 to improve fishing opportunities and streamline existing regulations. Authorization of the request to publish notice will be at the February 13, 2025 Commission meeting and discussion and adoption will occur at the April 17, 2025 Commission meeting.

The proposed rulemaking will allow any person with a commercial fishing license to assist a permitted sea urchin diver, eliminate Fridays during the seasonal closure for the northern fishery, reduce the size of the sea urchin closure at South Caspar Point, repeal the South Caspar Point closure in 2029, and streamline remaining regulations for clarity and ease of readability for the public.

If you have any questions regarding this item, contact Dr. Craig Shuman, Marine Regional Manager, at (805) 568-1246. The public notice for this rulemaking should identify Environmental Scientist Derek Stein as the Department's point of contact. His contact information is (562) 343-0295 or R7RegionalMgr@wildlife.ca.gov.

ec: **Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Eric Kord, Assistant Chief
Law Enforcement Division

Craig Shuman, D. Env., Region Manager
Marine Region

Joanna Grebel, Env. Program Manager
Marine Region

Melissa Miller-Henson, Executive Director
Fish and Game Commission
January 13, 2025
Page 2

Garrett Wheel, Attorney III
Office of General Council

Ona Alminas, Env. Program Manager
Regulations Unit

Mike Randall, Regulatory Analyst
Regulations Unit

Fish and Game Commission

David Thesell
Deputy Executive Director

Susan Ashcraft
Marine Adviser

Sherrie Fonbuena
Analyst

State of California
Fish and Game Commission
Initial Statement of Reasons for Regulatory Action

Amend Sections 120.7 and 128, and Add Section 120.8
Title 14, California Code of Regulations
Re: Commercial Sea Urchin and Sea Cucumber Fishing

I. Date of Initial Statement of Reasons: February 18, 2025

II. Dates and Locations of Scheduled Hearing

(a) Notice Hearing

Date: February 13, 2025

Location: Sacramento, CA

(b) Discussion/Adoption Hearing:

Date: April 17, 2025

Location: Sacramento, CA

III. Description of Regulatory Action

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

The California Fish and Game Commission (Commission) proposes to amend Section 120.7, Title 14, CCR, regarding commercial sea urchin fishery regulations. The amendments will allow a person to accompany, perform minor duties with, and monitor the safety of, a licensed sea urchin diver, if the person has a commercial fishing license without a sea urchin permit. Additionally, a new Section 120.8 will move certain provisions from Section 120.7 to simplify existing sea urchin regulations. Further amendments include removing a seasonal Friday prohibition in the northern portion of the fishery, reducing the spatial size of a sea urchin closure at South Caspar Point, clarifying how sea urchins are measured, and adding an accountability provision to ensure that all participants on a joint sea urchin trip are accountable for any violation on board a vessel supporting the fishing operation. Non-substantive amendments to Section 128 and Commercial Dive Fishing Log (DFW 120.7) are also proposed.

Background

Sea Urchin Fishery Seasonal Changes

Current regulation allows for statewide red sea urchin (*Mesocentrotus franciscanus*) commercial take seven days a week from November through the end of May. For the remainder of the year (June 1 through October 31), red sea urchin regulations differ north and south of the Monterey-San Luis Obispo County line. The statewide fishery has gone through multiple changes in the fishing season, and in 2008, regulations were changed to align regulations in ocean waters north and south of the Monterey-San Luis Obispo county line. However, in 2017, regulations were modified in the south to allow one more fishing day (Friday open) from June through October. Thus, commercial take remained prohibited for the fishery north of the Monterey-San Luis Obispo county line Friday, Saturday, and Sunday from June through October.

Since implementation of the Friday regulation for the southern fishery in 2018, there have been no noticeable negative effects on the red sea urchin resource. Harvest effort has not increased appreciably but has merely shifted effort more equally to Friday from the other open days. Allowing the divers to harvest on Friday has increased other market opportunities by making product available for lucrative weekend markets and increased safety by providing an additional day to fish when weather conditions are more favorable. The northern fishery is requesting to remove the existing harvesting prohibition on Fridays to receive the same benefits currently afforded to the southern fishery (Commission Petition 2023-04).

During 2014 through 2016, statewide kelp canopies (both giant and bull kelp) suffered historical losses caused by unfavorable environmental conditions, which decimated the statewide red sea urchin fishery. This was even more apparent in Northern California, where kelp canopy was reduced by at least 90 percent. The loss of the primary food source for sea urchin caused a failure in the northern fishery, which resulted in a subsequent qualification for Federal Fishery Disaster Relief in 2016 through 2019.

Sea Urchin Closure at South Caspar Point

A sea urchin closure at South Caspar Point was created in the late 1980s to act as a refuge to replenish nearby fished populations and to study management effectiveness (a no-take control site) during at time of high sea urchin take. In 2012, the Marine Protected Area (MPA) network implementation and the establishment of the Point Cabrillo State Marine Reserve, which borders the current South Caspar Point Sea Urchin Closure to the south, protects all species including sea urchin.

Recreational fishing regulations for Caspar Cove were recently amended to allow the continuation of unlimited purple sea urchin harvesting until April 1, 2029, for kelp restoration purposes (Section 29.06, Office of Administrative Law's File ID #2024-0301-02S). Using recreational divers to cull urchins is currently being considered as an option to be included in the Kelp Restoration and Management Plan (KRMP).

Current regulations

Subsection 120.7(a)(1) requires any person assisting a sea urchin diver to have a sea urchin permit. Subsections 120.7(b)(1) and (2) specify two classes of sea urchin permits, which include a sea urchin diving permit, and a sea urchin crewmember permit. A sea urchin diving permit is a limited entry permit with access through a lottery system, and is the only permit that allows for the take and sale of sea urchin for commercial purposes. The sea urchin crewmember permit is an open access permit, and is required to assist a sea urchin diving permittee with commercial activities; however, sea urchin crewmember permittees may not dive from a vessel to harvest sea urchins. Sea urchin crewmembers must purchase both a crewmember permit and a commercial fishing license. Currently, an individual possessing only a commercial fishing license cannot assist a sea urchin diver.

Subsection 120.7(n) specifies that statewide commercial red sea urchin harvest is allowed seven days a week from November through the end of May, but prohibited on Friday, Saturday, and Sunday from June through October north of the Monterey-San Luis Obispo county line, and on Saturday and Sunday from June through October south of the same county line (subsections 120.7(n)(1) and (2), respectively).

Subsections 120.7(c) through (m) and (q) specify permit renewal procedures, number of permits, new permit application procedures, drawings for new permits, permit fee, renewal appeal procedures, vessel identification requirements, the prohibition of possession of lobsters and abalone aboard a vessel used to take sea urchins, conditions under which a permit may be revoked, exemption from possessing a tidal invertebrate permit, logbook requirements and authorization for an assistant for a sea urchin diving permittee who has become physically unable to dive.

Subsection 120.7(o) specifies closed areas, including subsection 120.7(o)(2) which specifies that the South Caspar Point area located in Mendocino County and just south of the city of Fort Bragg is closed to all commercial fishing for sea urchins (See Figure 1).

Finally, subsection 120.7(p) describes how a sea urchin should be measured by excluding the spines and any portion of the ball and socket (See Figure 2).



Figure 1. Current area of South Caspar Point Sea Urchin Closure (green striped area) and Point Cabrillo State Marine Reserve (red striped area).



Figure 2. Measuring the shell (test) width of a sea urchin, the ball-and-socket attachment, and an example of the irregularity of a sea urchin test.

Subsections 128(a) and (b) specify the warty sea cucumber closed season, require that any warty sea cucumber taken during the closed season be returned to the water, and prohibit the possession of warty sea cucumber aboard, or landing of warty sea cucumber from any commercial fishing vessel during the closed season.

Subsection 128(c) specifies that sea cucumber dive permit holders must complete and submit accurate records on the logbook form incorporated by reference under Section 120.7.

Overview of Proposed Changes

The proposed amendments represent the cumulation of the California Department of Fish and Wildlife's (Department) internal discussions and incorporate input from the California Sea Urchin Commission (CSUC). The Nature Conservancy and Reef Check California were also consulted on the South Caspar Point closure to better understand their research activities at this location. Proposed amendments to sea urchin permits were also made to reflect new requirements under Fish and Game Code 9054.5 (Senate Bill 500, McGuire, 2023). Finally, the proposed changes are necessary to create more opportunities for the commercial sea urchin fishery.

The proposed actions are as follows:

1. Allow commercial fishermen to assist sea urchin divers

Existing regulations prohibit any person without a sea urchin permit from assisting a sea urchin diver while fishing. The proposed regulation would remove this restriction and allow anyone with a commercial fishing license to assist a sea urchin diver harvesting urchins.

2. Remove Friday prohibition in the north from June-October

The CSUC submitted a petition (Commission Petition 2023-04), requesting Fridays be re-opened to the northern commercial sea urchin fishery to allow for more favorable weather conditions, increased market opportunities, and more days to harvest red sea urchins.

3. Remove South Caspar Point sea urchin closure

The CSUC petition also requests to eliminate the sea urchin closure at South Caspar Point. The petition requested removal of the closure because it is no longer necessary due to adequate protections in the nearby marine protected areas, its elimination will not

result in a further loss in harvestable sea urchins, and sea urchin harvest will not interfere with ongoing kelp restoration activities.

4. Provide clarity to Section 120.7, and add new Section 120.8

Additional changes are proposed to improve clarity of existing regulations. Key items addressed in the proposed amendments include:

- Clarifying permitted activities under each type of sea urchin permit,
- Adding a new provision to ensure that all participants on a joint sea urchin trip are accountable for any violation on board a vessel assisting the fishing operation,
- Separating 120.7 into two sections to group regulations relating to permits in one section (120.7), and regulations that govern the fishery into another section (120.8), including clarifying how sea urchins should be measured.

5. Update Section 128, commercial take of sea cucumber, to reflect that the commercial dive fishing log will be incorporated by reference in new Section 120.8.

6. Update the commercial dive fishing log.

Additional changes are proposed to the structure of the regulations, making them easier to read and understand for the public. These changes, along with renumbering subsections, are non-substantive in nature.

Proposed Regulations

The regulatory changes the Commission is proposing are described below.

Amend Section 120.7.

Change the title of the section to “Permits Required to Commercially Take Sea Urchins,” referring only to the permits needed for the commercial harvest sea urchins.

Amend subsection 120.7(a) Permit Required.

The first sentence of subsection 120.7(a)(1) is renumbered as 120.7(a) and amended. Since a new exception is added in proposed new subsection 120.7(a)(2) to allow non-permit holders to assist permitted sea urchin divers, the provision “assisting in the taking of” is proposed to be repealed. Additionally, the word “possession” is being added to conform with current management measures in other fisheries where a permit is required for both take and possession thereafter as an enforceability measure. Therefore, this subsection specifies that any person taking or possessing sea urchins for commercial purposes shall have a valid sea urchin permit and have that permit in possession.

A portion of the second sentence of subsection 120.7(a)(1) “A sea urchin diving permit is not required to operate or assist in operating a vessel used to take sea urchins” is moved to subsection 120.7(a)(2)(B) and revised to state that a sea urchin diving or crewmember permit is not required to operate or assist in operating a vessel used to take sea urchins. The addition of “crewmember permit” is added for clarity and consistency with proposed new subsection 120.7(a)(2).

That portion of the second sentence of subsection 120.7(a)(1) “no person without a valid sea urchin diving permit shall engage in diving from a vessel from which sea urchins are

being taken or possessed for commercial purposes” is moved with amendment to subsection 120.7(a)(1)(A)ii.

The last part of the text in subsection 120.7(a)(1) which reads, “unless authorized by the department’s marine region regional manager or his or her designee for the purposes of sea urchin management or research” is repealed. It is necessary to remove this language completely from Section 120.7 as any management changes or research can be authorized through existing regulatory provisions such as a Scientific Collecting Permit (Section 650) or an Experimental Fishing Permit (Section 91).

Renumber subsection 120.7(a)(2) as (j).

This provision is moved to a new location.

Add subsection 120.7(a)(1) Classes of Permits.

This subsection now clearly defines the types (classes) of permits, which is necessary to improve the public’s understanding of what is required and/or prohibited while commercially fishing sea urchins.

Add subsection 120.7(a)(1)(A) Sea Urchin Diving Permit.

Subsection 120.7(a)(1)(A)i. Provisions are moved from the current subsection 120.7(b)(1) with amendment that specify that commercial fishermen who have qualified for permits pursuant to renumbered subsections 120.7(d) and (e) may be issued a sea urchin diving permit, and stipulates that this is the only permit that can be obtained to take and land sea urchins for commercial purposes. The age limit requirement of “must be 16 years or older” for this permit is proposed to be repealed as it’s redundant with the same age limit requirement for obtaining a commercial fishing license specified in Section 7852 of the California Fish and Game Code. A commercial fishing license is required to obtain a sea urchin diving permit.

Subsection 120.7(a)(1)(A)ii. Text from subsection 120.7(a)(1) is moved to this subsection, with amendment for clarity, to ensure that only a person with a valid sea urchin diving permit can enter the water at any time, primarily for enforcement of urchin harvest. This change is necessary to clarify the prohibition of any assistants or crewmembers who are helping on the vessel from also entering the water to reduce over harvesting of the population and ensure a one-to-one ratio of divers in the water to sea urchin diving permits issued to better manage the fishery.

Add subsection 120.7(a)(1)(B) Sea Urchin Crewmember Permit.

This provision is modified from the existing subsection 120.7(b)(2) to clarify that a person holding a sea urchin crewmemmber permit may only assist a sea urchin diving permittee during fishing operations. Additional text is added to clarify that a crewmember permittee may qualify for a sea urchin diving permit. The age limit requirement of “must be 16 years or older” for this permit is proposed to be repealed as it’s redundant with the same age limit requirement for obtaining a commercial fishing license. A commercial fishing license is required to obtain a sea urchin crewmemmber permit. Pursuant to subsection 120.7(a)(1)(A)ii., a crewmember permittee is not authorized to enter the water during a trip where sea urchins are being taken or possessed from commercial purposes

Add subsection 120.7(a)(2) Exceptions.

This new subsection is added to group all the exceptions to possessing a commercial sea urchin permit into one subsection.

Add subsection 120.7(a)(2)(A).

The new provisions in this subsection specify that individuals with a commercial fishing license are not required to obtain a sea urchin crewmember permit to assist a sea urchin diver in taking sea urchins. This provision is necessary to allow non-permitted persons to participate in the fishery to improve recruitment and safety. Additionally, allowing commercial fishermen to assist divers would align with the other major dive fishery, sea cucumber, which does not require a crewmember permit for diver assistance. This change would provide consistency across both fisheries. The only difference between fishermen assisting under this provision and those with a sea urchin crewmember permit is the non-permitted fishermen do not qualify for a sea urchin diving permit as described in subsections 120.7(d) and (e). Pursuant to subsection 120.7(a)(1)(A)ii., a licensed commercial fisherman assisting a sea urchin dive permittee under this provision is not authorized to enter the water during a trip where sea urchins are being taken or possessed from commercial purposes.

Add subsection 120.7(a)(2)(B).

This provision is moved from the second sentence of current subsection 120.7(a)(1) and amended to specify that neither a diving nor crewmember permit is required to operate a vessel used to take sea urchins.

Add subsection 120.7(a)(2)(C).

The current subsection 120.7(f) has been moved here and renumbered. The words “Exemption from Tidal Invertebrate Permit” are removed for consistency with the language structure of each paragraph of subsection 120.7(a)(2).

Add subsection 120.7(a)(3).

This addition makes clear that any person without a sea urchin diving permit or sea urchin crewmember permit would not qualify for a new sea urchin diving permit, nor would any of the persons operating under subsection 120.7(a)(2) qualify for preference points in the sea urchin lottery which is used to issue new sea urchin diving permits.

Add subsection 120.7(a)(4).

Specific language is added to address accountability on a sea urchin fishing vessel when multiple permittees are mixing their catch on the vessel. This provision clarifies that together all permittees, assistants, and anyone who should possess a permit who are working together on the vessel must adhere to the regulations and are responsible for all violations.

Renumber subsections 120.7(b)(1) and (2).

These provisions have been moved whole or in part to subsection 120.7(a) and modified as described above.

Renumber subsections 120.7(c) through (h) as (b) through (g). The date range in subsection (b)(1) is changed from a dash (-) to “through” for consistency with accessibility guidelines. The word “subsection” was corrected to “subdivision” in renumbered subsection 120.7(c)(3) to correct terminology used in the California Fish and Game Code. In renumbered subsection 120.7(e)(13), a grammar correction was made to change “...commercial fishermen that...” to “...commercial fishermen who...”.

Renumber subsections (i) and (j).

These provisions are moved to the new Section 120.8.

Renumber subsection 120.7(k) as (h), without change.

Renumber subsection 120.7(l) as subsection (a)(2)(C), with a non-substantive amendment as described above.

Renumber subsection 120.7(m).

These provisions are moved to the new Section 120.8, with a non-substantive amendment as described below.

Renumber current subsections 120.7(n), (o), and (p).

These provisions are moved to the new Section 120.8 and modified.

Renumber subsection 120.7(q) as (i).

This subsection is renumbered with minor amendment. The word “assistant” is being replaced by the word “designee” throughout this subsection, as this is a more accurate way to portray the fishermen chosen by a sea urchin diving permittee as their replacement should a medical emergency occur. Additionally, this change alleviates any confusion with those commercial fishermen assisting a sea urchin diver either through a sea urchin crewmember permit, or through the exception added allowing any licensed commercial fishermen to assist a sea urchin diver. In addition, “his or her” is replaced with the gender-neutral term “their.” These changes are non-substantive.

Add subsection 120.7(j).

This provision was moved from subsection 120.7(a)(2), and amended to replace “his or her” with the gender-neutral term “their.”

Authority and reference citations are proposed to be amended to reflect the splitting of Section 120.7 into two separate sections, leaving only those citations related to permits.

Add Section 120.8 Taking of Sea Urchin for Commercial Purposes

The regulations in new Section 120.8 describe the requirements for the operation of the sea urchin fishery. Those requirements related to permits will be retained in Section 120.7. The requirements within the current 120.7 pertaining to how the fishery operates will be moved to Section 120.8. Separating permitting regulations and fishery operation regulations will improve the clarity of the regulations.

Add subsection 120.8(a) Fishing Season.

Add subsection 120.8(a)(1).

Subsections 120.7(n)(1) through (3) are moved to subsection 120.8(a)(1) and amended to remove Friday from the June through October seasonal closure north of the Monterey-San Luis Obispo county line. This change would make the seasonal closure consistent with the fishery south of the Monterey-San Luis Obispo county line, leaving a statewide seasonal closure in place. Allowing harvest on Friday would give the fleet one more day (approximately 21 days per year from June through October) to take red sea urchin, which would benefit the fleet. The extended fishing week would provide more flexibility in selecting dive days with safer ocean conditions. The current closures for the red sea urchin fishery were instituted in 1993 to curb resource depletion and did not account for evolving market dynamics. Given the current capacity reduction framework and historically low sea urchin landings in the last ten years, keeping Friday closed is not necessary for effort reduction or resource concerns. In addition, the scientific name of red sea urchin is added for clarity.

Add subsection 120.8(a)(2).

This subsection clarifies that all other species of sea urchin remain open all year without closures. Existing regulations are silent on the season for all other species of urchins, except red urchin. This addition provides more clarity to the public that other sea urchins may be harvested year-round pursuant to Section 8140 of the California Fish and Game Code.

Add subsection 120.8(b). Closed Areas.

Add subsection 120.8(b)(1). South Caspar Point.

Subsection 120.7(o) is moved to subsection 120.8(b) and amended. The new South Caspar Point closure area would be bounded by the mean high tide line and a straight line connecting the two boundaries. This change reduces the closed area (indicated as green in Figure 3) of the South Caspar Point Sea Urchin Closure and reopens the remaining area to commercial sea urchin fishing as indicated in Figure 3. The closed area would be reduced by 89 percent, greatly increasing the area that divers can commercially harvest sea urchin while avoiding a disruption in data collections from purple sea urchin removals assisting in the development of the KRMP.

This closure is also no longer necessary to protect standing stock of the urchin population due to the implementation of California's Statewide MPA network in 2012, which includes the adjacent Point Cabrillo State Marine Reserve. Moreover, recreational take of sea urchin is allowed in the area, which reduces any protections established by the commercial sea urchin closure.

This newly established closure area will remain closed until April 2, 2029, which is one day after the sunset date of a provision that exempts recreational fishermen from the purple sea urchin recreational bag limit within a defined area in this cove as specified in Section 29.06. The one-day delay will ensure that the two dates are not overlapping and eliminate any conflict.

The proposed amendment also removes text in current subsection 120.7(o)(1) and the sentence “The Point Cabrillo State Marine Conservation Area remains closed to the take of all forms of marine life except as permitted in subsection 632(b)”, included in the current subsection 120.7(o)(2). Elimination of this text is necessary as it is duplicative with regulations overseeing MPAs found in Section 632.

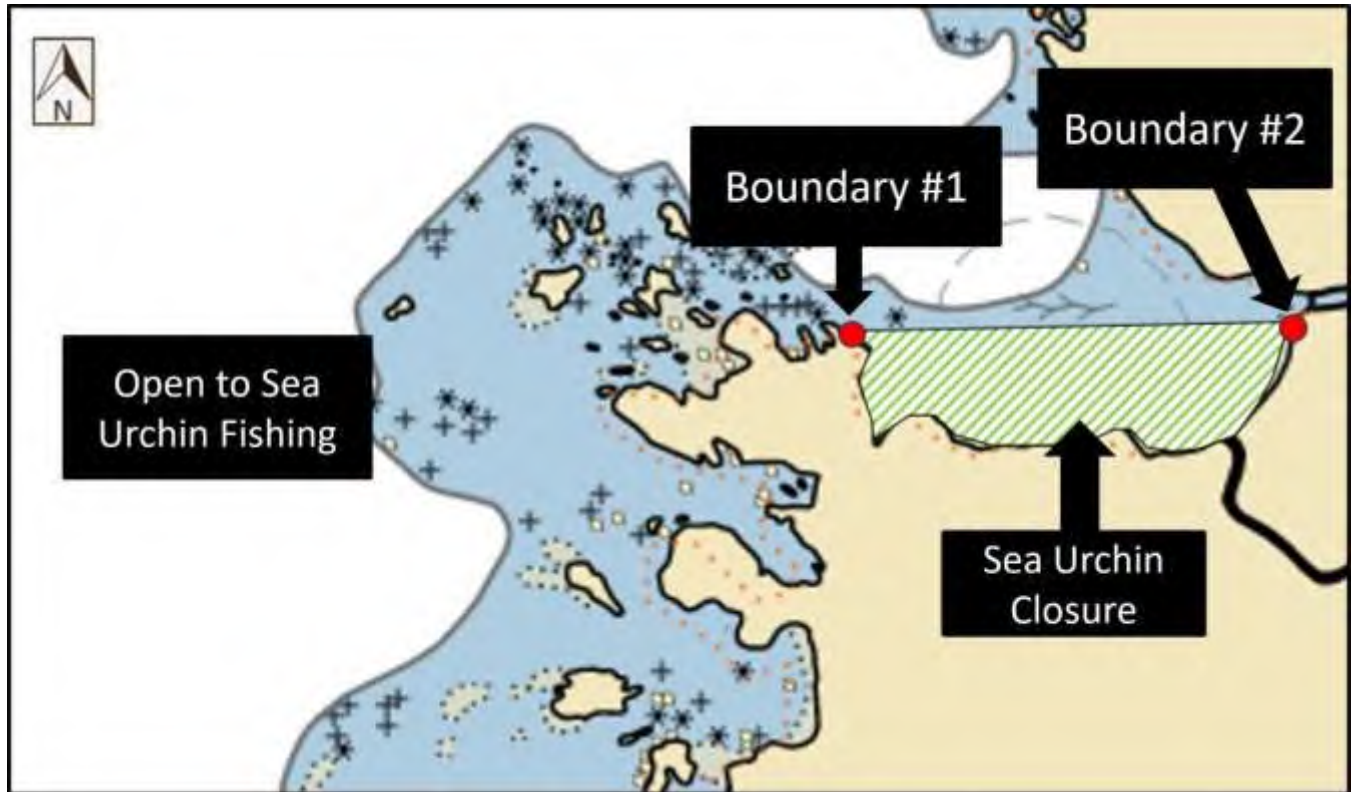


Figure 3. Proposed boundaries of South Caspar Point Sea Urchin Closure (green striped area).

Add subsection 120.8(c). Size Limits.

Subsection 120.8(c) defines how the sea urchins should be measured. The proposed regulation specifies that sea urchin shall be measured using the greatest shell diameter to avoid confusion about which part of the shell is used in the size restrictions since a sea urchin shell does not have a uniform shape (See Figure 2). Commercial red sea urchin regulations for Oregon and Washington use the words “largest” and “greatest”, respectively, when describing how to gauge the shell of red sea urchins, so this change would be consistent with other states.

Add subsection 120.8(c)(1)(A).

Subsection 120.7(p)(1) is moved to this subsection and amended to remove the words “In southern California” to reduce redundancy in the text, since the description of the boundary line describes which region of the state the size limit applies to (i.e., south of the Monterey-San Luis Obispo county line). Additionally, the text “or any portion of their ball-and-socket attachment to the shell” was also removed, as it is an ambiguous way to measure the urchin. Removing the reference to the spines’ ball and socket attachment will make it easier for enforcement and the urchin fishermen to measure an urchin’s diameter. Text relating to

shell diameter and text stating “not including the spines” has been moved to new subsection 120.8(c). The proposed regulation also replaces text stating “between one and one-half (1 ½) and three and one-quarter (3 ¼) inches” with text stating “greater than one and one-half (1 ½) and less than three and one-quarter (3 ¼) inches” and replaces “per load” with “per load or lot” for clarity since both are commonly used to describe offloading sea urchin catch.

Add subsection 120.8(c)(1)(B).

Subsection 120.7(p)(2) is moved to this subsection and amended to remove the words “In northern California” to reduce redundancy in the text, since the description of the boundary line describes which region of the state the size limit applies to (i.e., north of the Monterey-San Luis Obispo county line). Additionally, the text “or any portion of their ball-and-socket attachment to the shell” was also removed, as it is an ambiguous way to measure the urchin. Removing the reference to the spines’ ball and socket attachment will make it easier for enforcement and the urchin fishermen to measure an urchin’s diameter. Text relating to shell diameter and text stating “not including the spines” has been moved to new subsection 120.8(c). The proposed regulation also replaces text stating “between one and one-half (1 ½) and three and one-half (3 ½) inches” with text stating “greater than one and one-half (1 ½) and less than three and one-half (3 1/2) inches” and replaces “per load” with “per load or lot” for clarity.

Add subsection 120.8(c)(2).

This addition is necessary to clarify that there is no size limit on all other sea urchins taken commercially, excluding red sea urchins. Although “no size limit” is not explicitly described in the existing text, there is currently no size limit prescribed for other sea urchins in regulation or statute. There has not been any evidence presented that size limits are necessary to manage all other species of urchins in order to protect their populations.

Add subsection 120.8(c)(3).

Subsection 120.7(p)(3) is moved to this subsection and amended to delete text stating “as specified herein, while diving for sea urchins for commercial purposes.” to remove extraneous language. A comma is removed to correct a punctuation error.

Add subsection 120.8(d). Vessel Identification.

Subsection 120.7(i) is moved to this subsection without change.

Add subsection 120.8(e).

Subsection 120.7(j)(1) is moved to this subsection and amended to add a title of “Lobster Prohibition” and to remove “abalone”. The take of abalone is already prohibited recreationally and commercially pursuant to sections 29.15 and 100, respectively.

Add subsection 120.8(f).

Subsection 120.7(j)(2) is moved to this subsection without change except to add a title of “Lift Conditions.”

Add subsection 120.8(g).

Subsection 120.7(m) is moved to this subsection and amended to update the reference to the commercial dive fishing log to reflect the proposed new form number (DFW 120.8) and revision date (04/2025).

Amend Section 128 Commercial Taking of Sea Cucumber

Subsection 128(c) is revised to update the reference to the location of the commercial dive fishing log to reflect its proposed incorporation by reference in Section 120.8.

Amend Commercial Dive Fishing Log (DFW 120.7)

The commercial dive fishing log is amended to update the form number to DFW 120.8, update the revision date to 04/2025, provide separate fields for “port” and “dealer”, add instructions for requesting new logbooks, update example of completed form, and other minor edits.

(b) Goals and Benefits of the Regulation

It is the policy of this State to ensure the conservation, sustainable use, and, where feasible, restoration of California’s marine living resources for the benefit of all the citizens of the State. The objectives of this policy include, but are not limited to, conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of living marine resources that are sustainable; and recognizing the importance to the economy and the culture of California of sustainable sport and commercial fisheries.

The proposed regulations allow and encourage activities and uses of sea urchin that are sustainable and recognize the importance to the economy and culture of California of a sustainable commercial sea urchin fishery. Allowing an individual with a commercial fishing license to assist a permitted diver harvesting sea urchins will increase safety during fishing operations and provide opportunities for interested persons to participate in the fishery without the commitment of purchasing a permit. The sea urchin fishery will also benefit from increased opportunities to fish by removing a sea urchin closure area adjacent to Caspar Cove and removing Fridays as a prohibited fishing day during the June through October in the north without jeopardizing the sustainability of the sea urchin resource. Opening Fridays in the north also provides increased opportunities to the northern fishery and aligns regulations with the south.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Section 120.7

Authority: Sections 9054 and 9054.5, Fish and Game Code

Reference: Sections 713, 1050, 7850, 7857, 8500, 9054, 9054.5 and 9055, Fish and Game Code

Section 120.8

Authority: Sections 7880, 8026 and 9054, Fish and Game Code.

Reference: Sections 7880, 8026, 8140 and 9054, Fish and Game Code.

Section 128

Authority: Section 8405.3, Fish and Game Code.

Reference: Sections 8026, 8405.1, 8405.3 and 8500, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None

(e) Identification of Reports or Documents Assisting Regulation Change

- Petition to the California Fish and Game Commission for Regulation Change (2023-04) requested by David Goldenberg, Executive Director, California Sea Urchin Commission.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication

- March 19, 2024, Marine Resources Committee meeting.
- July 18, 2024, Marine Resources Committee meeting.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change:

No alternatives were identified by or brought to the attention of Commission staff that would have the same desired regulatory effect.

(b) No Change Alternative

Without the proposed changes, the outstanding issues concerning the regulations currently governing commercial sea urchin would remain unaddressed. This would mean that licensed commercial fishermen would still need a permit to assist a sea urchin diver harvesting urchins, Friday in the north would remain closed during June through October, the South Caspar Point Sea Urchin Closure would remain in effect, and some of the subsections in this regulation would remain confusing and unclear.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states as the proposed regulations impose no fees or costs and do not require further actions from any businesses that would incur indirect costs.

- (b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The Commission does not anticipate any impacts on the creation or elimination of jobs, the creation of new business, the elimination of existing businesses or the expansion of businesses in California. The Commission does not anticipate any benefits to the health and welfare of California residents, though there may be some benefits to commercial sea urchin worker safety by allowing Fridays to be available to the northern commercial sea urchin fishery to allow for more good weather options. Additionally, allowing an individual with a commercial fishing license to assist a permitted diver harvesting sea urchins will increase safety during fishing operations. The Commission anticipates benefits to the State's environment by sustainably managing California's sea urchin fishery resources.

- (c) Cost Impacts on a Representative Private Person or Business

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action as it imposes no new fees or costs.

- (d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

- (e) Nondiscretionary Costs/Savings to Local Agencies: None

- (f) Programs Mandated on Local Agencies or School Districts: None

- (g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None

- (h) Effect on Housing Costs: None

VII. Economic Impact Assessment

- (a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The cumulative effects of the proposed regulations are expected to be neutral with regard to the creation or elimination of jobs within the State.

- (b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The cumulative effects of the proposed regulations are expected to be neutral about the creation or elimination of businesses within the State.

- (c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The cumulative effects of the proposed regulations are expected to be neutral about the expansion of businesses within the State.

- (d) Benefits of the Regulation to the Health and Welfare of California Residents

The Commission does not anticipate impacts on the health and welfare of California residents.

(e) Benefits of the Regulation to Worker Safety

The Commission anticipates that there may be some benefits from the regulation to worker safety. Allowing Fridays to be available to the northern commercial sea urchin fishery to allow for more good weather options may reduce the risk of fishing in adverse weather conditions, and allowing an individual with a commercial fishing license to assist a permitted diver harvesting sea urchins will increase safety during fishing operations.

(f) Benefits of the Regulation to the State's Environment

The Commission anticipates benefits to the State's environment by sustainably managing California's sea urchin fishery resources.

(g) Other Benefits of the Regulation

None.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The California Fish and Game Commission (Commission) proposes to amend Section 120.7 Taking of Sea Urchins for Commercial Purposes and Section 128 Commercial Taking of Sea Cucumber.

Background

Current regulations in Section 120.7 specify commercial sea urchin fishery regulations.

Subsection 120.7(a) specifies that any person taking or assisting in taking sea urchin for commercial purposes must possess a valid sea urchin permit. Only persons with a valid sea urchin diving permit may dive from a vessel to harvest sea urchins. An individual possessing only a commercial fishing license cannot assist a sea urchin diver. This subsection also includes a provision which allows the California Department of Fish and Wildlife (Department) to authorize the holder of a valid sea urchin diving permit to harvest red sea urchins during a closed season or in a closed area for the purposes of cooperative sea urchin management and research activity.

Subsection 120.7(b) specifies two classes of sea urchin permits: a sea urchin diving permit and a sea urchin crewmember permit. A sea urchin diving permit is a limited entry permit with access through a lottery system and is the only permit that allows for the take and sale of sea urchin for commercial purposes. The sea urchin crewmember permit is an open access permit and is required to assist a sea urchin diving permittee with commercial activities.

Subsections 120.7(c) through (m) specify permit renewal procedures, number of permits, new permit application procedures, drawings for new permits, permit fee, renewal appeal procedures, vessel identification requirements, the prohibition of possession of lobsters and abalone aboard a vessel used to take sea urchins, conditions under which a permit may be revoked, exemption from possessing a tidal invertebrate permit, and logbook requirements.

Subsection 120.7(n) specifies that statewide commercial red sea urchin harvest is allowed seven days a week from November through the end of May, but prohibited on Friday, Saturday, and Sunday from June through October north of the Monterey-San Luis Obispo county line, and on Saturday and Sunday from June through October south of the same county line.

Subsection 120.7(o) specifies closed areas, including South Caspar Point, located in Mendocino County, which is closed to all commercial fishing for sea urchins.

Subsection 120.7(p) describes how a sea urchin should be measured by excluding the spines and any portion of the ball and socket.

Subsection 120.7(q) authorizes an assistant for a sea urchin diving permittee who has become physically unable to dive.

Current regulations in Section 128 specify commercial sea cucumber regulations.

Subsections 128(a) and (b) specify the warty sea cucumber closed season, require that any warty sea cucumber taken during the closed season be returned to the water, and prohibit the possession of warty sea cucumber aboard, or landing of warty sea cucumber from any commercial fishing vessel during the closed season.

Subsection 128(c) specifies that sea cucumber dive permit holders must complete and submit accurate records on the logbook form incorporated by reference under Section 120.7.

Proposed Changes to the Regulations

The section title will be changed to “120.7 Permits Used to Commercially Take Sea Urchins”, consolidating the requirements and conditions for various permits needed for the commercial harvest of sea urchins. Additionally, a new Section 120.8 Taking of Sea Urchin for Commercial Purposes will be added consolidating the conditions for the operation of the sea urchin fishery.

The amendments to 120.7 will:

- Clearly define the permitted activities of each type (class) of sea urchin permit and consolidate each subsection related to permit and permits issuance.
- Allow licensed fishermen to accompany and assist a sea urchin diving permittee during a fishing trip while providing additional safety to that diver. The assisting fishermen is required to have in possession a commercial fishing license, however, the limited assistance does not require a sea urchin permit. The goal is to increase the availability of fishermen for hire and to increase safety on fishing trips when the sea urchin diving permittee is alone. The only difference between fishermen assisting under this provision and those with a sea urchin crewmember permit is the non-permitted fishermen do not qualify for a sea urchin diving permit nor qualify for preference points in the sea urchin lottery which is used to issue new sea urchin diving permits.
- Add a new provision to ensure that all participants on a joint sea urchin trip are accountable for any violation on board a vessel assisting the fishing operation.
- Revise the language concerning an “assistant” for a sea urchin diving permittee who has become physically unable to dive, by changing “assistant” to “designee” to differentiate this from others who assist sea urchin divers.

The addition of 120.8 will:

- Allow the harvest of red sea urchin on Fridays north of the Monterey-San Luis Obispo county line from June through October.
- Greatly reduce the size of the South Caspar Point Sea Urchin Closure and eliminate the entire closure after April 1, 2029.
- Repeal language related to commercial take of sea urchins in marine protected areas.
- Clarify that there are no size limits or seasonal closures for all other species of sea urchin, other than red sea urchin.
- Specify how sea urchins should be measured and clarify language regarding the red sea urchin size limit.
- Update the reference to the commercial dive fishing log to reflect the proposed new form number and revision date.

The amendment to Section 128 will revise the reference to the location of the commercial dive fishing log to reflect its proposed incorporation by reference in Section 120.8.

The proposed amendments to the commercial dive fishing log (DFW 120.7) will update form number to DFW 120.8, update the revision date, provide separate fields for “port” and “dealer”, add instructions for requesting new logbooks, update example of completed form, and other minor edits.

Minor editorial changes are proposed to improve the clarity and consistency of the regulations, correct formatting, grammar and punctuation, and to conform to accessibility guidelines.

Benefit of the Regulations:

It is the policy of this State to ensure the conservation, sustainable use, and, where feasible, restoration of California's marine living resources for the benefit of all the citizens of the State. The objectives of this policy include, but are not limited to, conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of living marine resources that are sustainable; and recognizing the importance to the economy and the culture of California of sustainable sport and commercial fisheries.

The proposed regulations allow and encourage activities and uses of sea urchin that are sustainable and recognize the importance to the economy and culture of California of sustainable commercial sea urchin fishery. Allowing an individual with a commercial fishing license to assist a permitted diver harvesting sea urchins will increase safety during fishing operations and provide opportunities for interested persons to participate in the fishery without the commitment of purchasing a permit. The sea urchin fishery will also benefit from increased opportunities to fish by removing a sea urchin closure area adjacent to Caspar Cove and removing Fridays as a prohibited fishing day during June through October in the north without jeopardizing the sustainability of the sea urchin resource. Opening Fridays in the north also provides increased opportunities to the northern fishery and aligns regulations with the south.

Consistency and Compatibility with Existing Regulations:

The proposed regulations are neither inconsistent nor incompatible with existing state regulations. Section 20, Article IV, of the state Constitution specifies that the Legislature may delegate to the Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to adopt regulations governing the commercial take of sea urchin. No other state agency has the authority to adopt such regulations. The Commission has searched the CCR for any regulations regarding commercial sea urchin fishing; therefore, the Commission has concluded that the proposed regulations are neither inconsistent nor incompatible with existing state regulations.

Proposed Regulatory Language

Section 120.7, Title 14, CCR, is amended to read:

§ 120.7. Taking of Sea Urchins for Commercial Purposes. Permits Required to Commercially Take Sea Urchins

- (a) Permit Required. ~~(1) Any person taking or assisting in the taking of~~ possessing sea urchins for commercial purposes shall have a valid sea urchin permit and shall be in possession of said permit when engaged in such activities. ~~A sea urchin diving permit is not required to operate or assist in operating a vessel used to take sea urchins, however, no person without a valid sea urchin diving permit shall engage in diving from a vessel from which sea urchins are being taken or possessed for commercial purposes, unless authorized by the department's marine region regional manager or his or her designee for the purposes of sea urchin management or research.~~
- ~~(2) To provide an economic incentive for cooperative sea urchin management and research activity, and notwithstanding any other portion of this section, the department may authorize the holder of a valid sea urchin diving permit to harvest (take, possess, land and/or sell) red sea urchins during a closed season or in a closed area, subject to such restrictions regarding date(s), location(s), time(s), size, poundage or other matters as specified by the department. Any data collected during such harvest activity shall be made available to the department. The form of this authorization shall be a letter from the department's marine region regional manager or his or her designee issued to the permittee and containing all conditions of use.~~

(1) Classes of Permits.

(A) Sea Urchin Diving Permit.

- i. This permit is required for taking and landing sea urchins for commercial purposes and may be issued to licensed commercial fishermen who have qualified for this permit pursuant to subsections (d) and (e).
- ii. No person without a valid sea urchin diving permit shall enter the water at any time during a trip where sea urchins are being taken or possessed for commercial purposes.

(B) Sea Urchin Crewmember Permit. This permit may be issued to licensed commercial fishermen who do not qualify for a sea urchin diving permit. This permit allows an individual to assist a sea urchin diver and is required for qualification of a new sea urchin diving permit, pursuant to subsections (d) and (e).

(2) Exceptions

(A) A sea urchin crewmember permit is not required for individuals with a valid commercial fishing license to assist a permitted sea urchin diver, as long as the permitted sea urchin diver is present.

(B) A sea urchin diving or crewmember permit is not required to operate or assist in operating a vessel used to take sea urchins.

(C) A sea urchin diver or sea urchin crewmember operating under the provisions of this section is not required to possess a Tidal Invertebrate Permit, but is subject to the provisions of Section 123.

(3) Individuals operating under subsections (a)(2)(A) through (B) do not qualify for a sea urchin diving permit.

(4) On any day when sea urchins are taken or possessed for commercial purposes, all sea urchin diving permittees, sea urchin crewmember permittees, assistants supporting these permittees, and any person who should possess a sea urchin diver or crewmember permit who are working together may be cited for violations of this section or any other regulation or law during the fishing trip.

~~(b)~~ Classes of Permits.

~~(1) Sea Urchin Diving Permit. Sea urchin diving permits will be issued to licensed commercial fishermen 16 years of age or older who have qualified for permits pursuant to subsection (c).~~

~~(2) Sea Urchin Crewmember Permit. Sea urchin crewmember permits will be issued to licensed commercial fishermen 16 years of age or older who do not qualify for sea urchin diving permits.~~

~~(c)~~ (b) Permit Renewal.

(1) Applicants for renewal of sea urchin diving permits must have held a valid, unrevoked sea urchin diving permit in the immediately preceding permit year (~~April 1– March 31~~April 1 through March 31).

(2) Applications for renewal of sea urchin diving permits shall be received by the department or, if mailed, postmarked no later than April 30. Late fees, late fee deadlines, and late renewal appeal provisions are specified in Fish and Game Code Section 7852.2.

~~(d)~~ (c) Number of Permits.

(1) All qualified prior sea urchin diving permittees shall be eligible to receive diving permits regardless of the number issued.

(2) If the number of diving permits issued to prior permittees is less than 150, the number of new sea urchin diving permits to be issued shall only be the difference between the number of diving permits issued to prior permittees in the immediately preceding permit year (ending March 31) and 150.

- (3) While the number of diving permits issued to prior permittees is greater than 150, only one new sea urchin diving permit shall be available for every 11 permits that are retired pursuant to Fish and Game Code ~~subsection~~ subdivision 7852.2(c).

~~(e)~~ (d) Applications for New Permits:

- (1) A drawing shall be held annually for any new sea urchin diving permits that become available for issuance.
- (2) Applications for new sea urchin diving permits shall be made available each year through the department's Automated License Data System, at department license sales offices, the department's Internet Sales site, and at department's license agents authorized to sell commercial fishing licenses.
- (3) Applicants shall apply by March 31 of each year.
- (4) Applicants shall possess a valid Commercial Fishing License and a valid sea urchin crewmember permit for each of the two permit years immediately preceding the permit year when the drawing is done.
- (5) Applicants shall pay the nonrefundable processing fee as specified in Section 705 for each drawing application.
- (6) Each applicant shall receive a drawing receipt printed from the terminal or downloaded from the Internet. The receipt shall contain the applicant's name and permanent identification number, proof of entry into drawing, and their current preference points for the drawing.
- (7) Applicants shall not submit more than one drawing application for the same license year.

~~(f)~~ (e) Drawings for New Permits

- (1) The department shall award any new permits using a Modified-Preference Point drawing system.
- (2) The Modified-Preference Point drawing system shall award proportions of permit quota using the following drawing methods:
 - (A) Preference Point Drawing: Permits in the preference quota are awarded based on the following order of priority: accumulated preference point totals (highest to lowest), and computer-generated random number (lowest to highest).
 - (B) Random Drawing: Permits in the random quota are awarded according to computer-generated random number (lowest to highest), without consideration of accumulated preference points.
- (3) The available new permit quantity shall be split into separate quotas. Every fifth permit that becomes available shall belong to the random quota while all other permits shall

belong to the preference quota. This four-to-one ratio for sorting will continue indefinitely.

- (4) Successful applicants and a list of alternates shall be determined by drawing within 20 business days following the application deadline date. If the drawing is delayed due to circumstances beyond the department's control, the department shall conduct the drawing at the earliest date possible.
 - (5) Alternates shall be selected using a Preference Point Drawing.
 - (6) Successful applicants will be notified as soon as practical. Successful applicants shall submit the fee for a Sea Urchin Diving Permit, as specified in Fish and Game Code Section 9055 to the department's License and Revenue Branch by 5:00 p.m. on or before or, if mailed, postmarked no later than May 15 each year. If the deadline to submit the fee falls on a weekend or holiday payment will be accepted until the close of business on the first state business day following the deadline to submit payment.
 - (7) Should the available permit quota remain unfilled after that date, the alternate list shall be used to award any available permits.
 - (8) An applicant shall earn one (1) preference point each time the applicant participates in a drawing for sea urchin diving permit.
 - (9) Successful applicants or alternates that are issued a sea urchin diving permit shall lose all accumulated preference points for the drawing.
 - (10) Preference points shall not be transferred to another person.
 - (11) The department shall maintain records of preference points earned by each applicant based on the identification number assigned to each customer by the department's Automated License Data System. The customer's identification number, Get Outdoors ID (GO ID) will be printed on each drawing receipt issued by the Automated License Data System. Applicants shall notify the department's License and Revenue Branch in Sacramento in writing of any changes or corrections regarding name, mailing address, or date of birth.
 - (12) Persons not applying in the sea urchin diving permit drawing for five (5) consecutive years starting in 2018 shall have their preference points for the sea urchin drawing reduced to zero (0). For the purposes of this subsection, persons whose applications are disqualified from drawing shall be considered the same as persons not applying.
 - (13) Eligible commercial fisherman ~~that~~ who applied in the sea urchin diving permit drawing from 2006–2017 and were not awarded a sea urchin diving permit in any of these years shall be assigned one preference point for each year they applied in these drawings.
- ~~(g)~~ (f) Fee. The applicant for a sea urchin crewmember permit shall submit the fees and the completed application, as specified in Section 705, to the address listed on the application.

~~(h)-(g)~~ Renewal Appeals. Late renewal appeal provisions are specified in Fish and Game Code Section 7852.2.

~~(i) Vessel Identification~~. When sea urchins are taken under these regulations, the vessel's commercial registration number shall be displayed on both sides of the boat. The number shall be black, at least 10 inches high, and on a white background. All permittees aboard the boat shall be mutually responsible for the proper display of the vessel's commercial registration number.

~~(j) Conditions of the Permit:~~

~~(1) No person shall take or possess lobsters or abalone aboard any boat used to take sea urchins under these regulations on any day that sea urchins have been taken or are to be taken.~~

~~(2) Hydraulic lifts and air lifts shall be used only in such a manner that no rocks or other mineral matter, aquatic plants, fish or other aquatic life except sea urchins, shall be removed from the bottom or otherwise disturbed.~~

~~(k)~~ (h) Revocation of Permits. Any permit may be suspended, revoked, or canceled by the commission upon breach or violation of any fish and game regulation pertaining to the take of sea urchins or abalone; or violation of the terms or conditions of the permit by the holders thereof, their agents, servants, employees or those acting under their direction and control.

~~(l) Exemption from Tidal Invertebrate Permit~~. A sea urchin diver or sea urchin crewmember operating under the provisions of this section is not required to possess a Tidal Invertebrate Permit, but is subject to the provisions of Section 123.

~~(m) Logbooks~~. Pursuant to Section 190, each permittee shall keep and submit a complete and accurate record of all sea urchin fishing activities on a form Commercial Dive Fishing Log (DFW 120.7 (REV. 03/2024)), incorporated herein by reference, provided by the department.

~~(n) Fishing Season:~~

~~(1) Red sea urchin shall not be taken for commercial purposes on Friday, Saturday, and Sunday north of the Monterey-San Luis Obispo county line from June 1 through October 31.~~

~~(2) Red sea urchin shall not be taken for commercial purposes on Saturday and Sunday south of the Monterey-San Luis Obispo county line from June 1 through October 31.~~

~~(3) During any closed period, no red sea urchins may be possessed on any commercially registered vessel, except that any commercially registered vessel may transport red sea urchins after any closure goes into effect, provided that the vessel is in port no later than 0800 hours on the first day of the closed period.~~

~~(o) Closed Areas:~~

~~(1) Sea urchins shall not be taken for commercial purposes in state marine reserves or state marine parks. Specific regulations in state marine conservation areas may prohibit the commercial take of sea urchins as per subsection 632(b).~~

~~(2) The South Caspar Point area in Mendocino County is closed to all commercial fishing for sea urchins. This area is bounded on the north by a line extending 90° magnetic from sea to the mouth of Caspar Creek (north bank) in Caspar Cove, on the south by the northern boundary of the Point Cabrillo State Marine Conservation Area and its westward extension to the 120-foot depth contour, on the west by 120-foot depth contour line connecting the north and south boundary lines, and on the East by the mainland shore. The Point Cabrillo State Marine Conservation Area remains closed to the take of all forms of marine life except as permitted in subsection 632(b).~~

~~(p) Size Limit.~~

~~(1) In southern California (south of the Monterey-San Luis Obispo county line) no more than thirty (30) red sea urchins between one and one-half (1 1/2) and three and one-quarter (3 1/4) inches in shell diameter, not including the spines or any portion of their ball-and-socket attachment to the shell, per permittee per load, may be taken, possessed, sold or purchased.~~

~~(2) In northern California (north of the Monterey-San Luis Obispo county line) no more than thirty (30) red sea urchins between one and one-half (1 1/2) and three and one-half (3 1/2) inches in shell diameter, not including the spines or any portion of their ball-and-socket attachment to the shell, per permittee per load, may be taken, possessed, sold or purchased.~~

~~(3) Every sea urchin permittee shall carry and use an accurate measuring device, to determine the size of red sea urchins being taken as specified herein, while diving for sea urchins for commercial purposes.~~

~~(q) (i) Authorization of an Assistant Designee for a Sea Urchin Diver Permittee.~~

~~(1) The holder of a sea urchin diving permit may designate a licensed commercial fisherman as a sea urchin diver assistant designee upon written approval from the department, provided that:~~

~~(A) The sea urchin diving permit has not been suspended or revoked;~~

~~(B) The permittee has become physically unable to dive due to a severe unforeseen or catastrophic long-term (expected to be for one year or longer) or permanent injury or disease; and,~~

~~(C) The injury or disease occurred after entering the sea urchin fishery.~~

~~(2) The department may authorize, in writing, the particular licensed commercial fisherman to be designated by the permittee as a sea urchin diver assistant designee, providing the following conditions have been met:~~

- (A) The permittee provides documentation within 90 days of the request to the department from a qualified physician that the permittee suffers from a disease or injury and it will prevent the permittee from diving. Such conditions shall not include short or long-term common illnesses, conditions caused or primarily exacerbated by aging, or any other condition which appears to be marginal or common, such as routine back or neck problems;
 - (B) The permittee has no violations or pending violations for which ~~his or her~~ their permit could be revoked; and,
 - (C) The proposed sea urchin diver ~~assistant~~ designee has a valid California commercial fishing license and has not had any California commercial fishing license or permit suspended or revoked; has never been convicted, and no charges are pending for a violation of any provision of the Fish and Game Code or Title 14, California Code of Regulations.
- (3) Special Provisions:
- (A) The authorized sea urchin diver ~~assistant~~ designee may take or assist in the taking of sea urchin only when in the company of the permittee and only for the duration of the permit year in which the authorization is issued.
 - (B) The permittee shall have no authority to, and shall not dive for sea urchin while a valid letter authorizing the permittee to designate ~~an assistant a~~ a designee exists, regardless of whether or not the ~~assistant~~ designee is actively diving.
 - (C) The authorized sea urchin diver ~~assistant~~ designee shall have no right to ownership or transfer of the permit beyond that which is otherwise provided by law.
 - (D) The sea urchin diving permit, in addition to the sea urchin diver ~~assistant~~ designee authority shall be subject to revocation, suspension or other actions provided in law or regulation, upon violations committed by the sea urchin diver ~~assistant~~ designee, when acting under the authority of a sea urchin diver ~~assistant~~ designee. The ~~assistant~~ designee shall take no actions authorized pursuant to a sea urchin diver permit without the consent of the permittee.
 - (E) The department shall review the authority authorized pursuant to this section at least once every year and may withdraw the authority if any of the conditions are not met.
- (4) Fee Requirement. Any person authorized as a sea urchin diver ~~assistant~~ designee pursuant to this subsection shall annually pay a fee to the department equal to the amount required of permittees pursuant to Fish and Game Code Section 9055.
- (5) Required Possession of Department Authorization. The sea urchin diver ~~assistant~~ designee shall carry the department's letter of authority whenever conducting activities authorized pursuant to the subsection.

(j) To provide an economic incentive for cooperative sea urchin management and research activity, and notwithstanding any other portion of this section, the department may authorize the holder of a valid sea urchin diving permit to harvest (take, possess, land and/or sell) red sea urchins during a closed season or in a closed area, subject to such restrictions regarding date(s), location(s), time(s), size, poundage or other matters as specified by the department. Any data collected during such harvest activity shall be made available to the department. The form of this authorization shall be a letter from the department's marine region regional manager or their designee issued to the permittee and containing all conditions of use.

NOTE: Authority cited: Sections ~~713, 1050~~, 9054 and 9054.5, Fish and Game Code.

Reference: Sections 713, 1050, 7850, ~~7852.2~~, 7857, 8500, 9054, 9054.5 and 9055, Fish and Game Code.

Proposed Regulatory Language

Section 120.8, Title 14, CCR, is added to read:

120.8 Taking of Sea Urchin for Commercial Purposes

(a) Fishing Season.

(1) Red sea urchin (*Mesocentrotus franciscanus*) shall not be taken for commercial purposes on Saturday and Sunday, statewide, from June 1 through October 31. During any closed period, no red sea urchins may be possessed on any commercially registered vessel, except that any commercially registered vessel may transport red sea urchins after any closure goes into effect, provided that the vessel is in port no later than 0800 hours on the first day of the closed period.

(2) Other Sea Urchins. May be taken year-round.

(b) Closed Areas.

(1) Notwithstanding other provisions of this section and until April 2, 2029: The South Caspar Point area in Mendocino County is closed to all commercial fishing for sea urchins. This area is bounded by the mean high tide line and a straight line connecting the following points: 39° 21.693' N latitude 123° 49.360' W longitude and 39° 21.714' N latitude 123° 49.024' W longitude.

(c) Size Limits. Sea urchin shall be measured by the greatest shell diameter (not including the spines).

(1) Red Sea Urchin.

(A) South of the Monterey-San Luis Obispo county line, no more than thirty (30) red sea urchins greater than one and one-half (1 1/2) and less than three and one-quarter (3 1/4) inches per permittee per load or lot, may be taken, possessed, sold or purchased.

(B) North of the Monterey-San Luis Obispo county line, no more than thirty (30) red sea urchins greater than one and one-half (1 1/2) and less than three and one-half (3 1/2) inches per permittee per load or lot, may be taken, possessed, sold or purchased.

(2) Other Sea Urchins. No size limit.

(3) Every sea urchin permittee shall carry and use an accurate measuring device to determine the size of red sea urchins being taken.

(d) Vessel Identification. When sea urchins are taken under these regulations, the vessel's commercial registration number shall be displayed on both sides of the boat. The number shall be black, at least 10 inches high, and on a white background. All permittees aboard the boat shall be mutually responsible for the proper display of the vessel's commercial registration number.

(e) Lobster Prohibition. No person shall take or possess lobsters aboard any boat used to take sea urchins under these regulations on any day that sea urchins have been taken or are to be taken.

(f) Lift Conditions. Hydraulic lifts and air lifts shall be used only in such a manner that no rocks or other mineral matter, aquatic plants, fish or other aquatic life except sea urchins, shall be removed from the bottom or otherwise disturbed.

(g) Logbooks. Pursuant to Section 190, each permittee shall keep and submit a complete and accurate record of all sea urchin fishing activities on a form Commercial Dive Fishing Log (DFW 120.8 (REV. 04/2025)), incorporated herein by reference, provided by the department.

NOTE: Authority cited: Sections 7880, 8026 and 9054, Fish and Game Code.

Reference: Sections 7880, 8026, 8140 and 9054 Fish and Game Code.

Proposed Regulatory Language

Section 128, Title 14, CCR, is amended to read:

§ 128. Commercial Taking of Sea Cucumber.

(a) Closed Season. Warty sea cucumber may not be taken for commercial purpose from March 1 through June 14.

(b) All warty sea cucumber taken during the closed season shall be immediately returned to the water. Warty sea cucumber may not be possessed aboard or landed from any commercial fishing vessel during the closed season.

(c) Pursuant to Section 190 of these regulations, each sea cucumber dive permit holder shall complete and submit an accurate record of ~~his/her~~ their sea cucumber fishing activities on the logbook form incorporated by reference under Section ~~420.7~~, 120.8, of these regulations. The completed daily records shall be sent to the department address specified on the logbook.

Note: Authority cited: Section 8405.3, Fish and Game Code. Reference: Sections 8026, 8405.1, 8405.3 and 8500, Fish and Game Code.

COMMERCIAL DIVE FISHING LOG



CALIFORNIA NATURAL
RESOURCES AGENCY

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

INSTRUCTIONS

- Each sea urchin or sea cucumber permittee is required to prepare a daily log. Use one log for each month of fishing activity (use additional pages if necessary). Do not submit a log for the months not fished.
 - Place flyleaf under duplicate copy. No carbon paper is required. Do not allow book to get wet.
 - Use a ball-point pen. Enter all information at top of the log.
- Field descriptions for each location fished:
- “Day” is the calendar day fished
- “Block Number” is the origin block number from the California Fisheries Chart Series available at <https://wildlife.ca.gov/Fishing/Commercial/MFSU>
- “Lat/Lon” is the latitude and longitude, to the 0.01 minute, of the catch location
- “Species” is the species of the catch
- “Landmark” is the most generally recognizable feature near the area fished
- “Depth Range” is the minimum and maximum depths fished (in feet)
- “Diver Hours” is the total time underwater, to the nearest ½ hour, at each dive site ~~is site~~
- “Pounds Harvested” is the combined weight of all harvested catch species
- “Port and Dealer” is the port of landing ~~and the name of the dealer buying the catch~~
- “Dealer” is the name of the dealer buying the catch
- “Fish Ticket Number” is the serial number of the electronic fish ticket (E-tix) or landing receipt associated with the harvested catch.
- “Remarks” are comments on the catch or other noteworthy conditions
- One line should be completed for each location fished, if more than one location is fished on a single day.
 - Please mail to the Department of Fish and Wildlife the top Department’s copy of the logs on a monthly basis in compliance with Section 190 of Title 14, California Code of ~~Regulations~~ Regulations.
 - By the 10th day of the following month, completed logs should be returned to:

(All sea cucumber logs)

Calif. Dept. of Fish and Wildlife
1933 Cliff Drive, Suite #9
Santa Barbara, CA 93109

(Southern California sea urchin logs)

Calif. Dept. of Fish and Wildlife
3030 Old Ranch Parkway, Suite 400
Seal Beach, CA 90740

(Northern California sea urchin logs)

Calif. Dept. of Fish and Wildlife
3637 Westwind Blvd.
Santa Rosa, CA 95403

1. Information requested by:

NOTICE
California Natural Resources Agency
Department of Fish and Wildlife
Marine Resources Region
2. Responsible Agency Official:

Regional Manager, Marine Region
California Dept. of Fish and Wildlife
3030 Old Ranch Parkway, Suite 400
Seal Beach, CA 90740
3. Authority:

California Code of Regulation
Regulations
Title 14, Sections 190 and ~~120.7(m)~~
120.8
California Fish and Game Code
Sections 8026 and 8405.1
4. Each sea urchin or sea cucumber permittee is required to prepare a daily log. Failure to keep and submit complete and accurate logs may result in revocation or suspension of your diving permit by the Department.
5. Fishing activity records shall be kept on forms provided by the Department.
6. All fishing activity records shall be deemed confidential upon receipt by the Department. Information provided on the logs is summarized and used to develop a profile of the fishery, including catch area and depth, relative changes in population, catch-per-unit-of effort, etc. This data will aid in developing management measures to insure a long-term viable fishery. Summaries, without reference to individuals, will be available to the public.
7. Information provided on logs may be made available to the National Marine Fisheries Service, Pacific Fisheries Fishery Management Council, and the Pacific States Marine Fisheries Commission.
8. Every individual has the right of access to ~~his or her~~ their own information: California Civil Code

To request a new dive fishery logbook, visit
<https://wildlife.ca.gov/Fishing/Commercial/MFSU/Logbook-Request>
or call CDFW Marine Fisheries Statistical Unit at (562) 342-7130

EXAMPLE

Each diver is required to fill out their own log
Please use a separate row for each species (see instruction sheet)

Month of NOV Jan Year 2017-2025

Permit Holder (name) Bill Smith Christopher Cabezon

Permittee's I.D. # L 98765 56799

Vessel Name ORCA # Uni-licious

CDFW Commercial Boat Registration Number 33000

Day	Block Number	Lat/Lon. (to 0.01 minutes)		*Species (see codes below)	Landmark	Depth Range (feet)	Hours**	Pounds Harvested	Port and Dealer	Dealer	Fish Ticket Number	Remarks
		Latitude	Longitude									
14	704	33 57.57	119 43.62	RSU	Bowen PT	20-20	3	800 750	C.I./Unico-SB	Unico LLC	316658E	Big Swell
5	685	34 01.71	119 36.71		Mutlexa Bay	10 - 50	2				923456E	Good day
15	687	34 02.02	119 53.15	RSU	Black PT	25-30	3.5	1,100 556	Vent/Unico-	Browens	316723E	Good
10	684	34 01.29	120 23.75	WSC	Kladdy reef	5 - 24	3		SB	Fish	917581E	Rough
												Conditions
20	711	33 54.86	120 02.86	WSC	East PT.	30-40	2.5	600 180	C.I./PSFCO-	Unico LLC	303547E	Survey
27	708	33 59.41	119 32.34	PSU	Riens ridge	45 - 70	1.5		SB		966211E	Big Swell
27	710	33 55.33	119 58.77	RSU	Sterek rock	27 - 92	3	672	SB	Leberg	934761E	Large
										Uni		urchin
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						

*Species Codes: red sea urchin = RSU, purple sea urchin = PSU, warty sea cucumber = WSC, giant red sea cucumber = GRS
Wavy turban snail = WTS, Kellet's whelk = KW, Keyhole limpet = KHL

**Diver hours = Total hours spent harvesting underwater at this location, to the nearest ½ hour

Signature: Bill Smith Christopher Cabezon
Permit Holder

Each diver is required to fill out their own log
Please use a separate row for each species (see instruction sheet)

Month of _____ Year _____
Permit Holder (name) _____
Vessel Name _____

Permittee's I.D. # L _____
CDFW Commercial Boat Registration Number _____

Day	Block Number	Lat/Lon. (to 0.01 minutes)		*Species (see codes below)	Landmark	Depth Range (feet)	Hours**	Pounds Harvested	Port and Dealer	Dealer	Fish Ticket Number	Remarks
		Latitude	Longitude									
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						
						-						

*Species Codes: red sea urchin = RSU, purple sea urchin = PSU, warty sea cucumber = WSC, giant red sea cucumber = GRS
Wavy turban snail = WTS, Kellet's whelk = KW, Keyhole limpet = KHL
**Diver hours = Total hours spent harvesting underwater at this location, to the nearest ½ hour
Signature: _____
Permit Holder

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME California Fish and Game Commission	CONTACT PERSON David Thesell	EMAIL ADDRESS fgc@fgc.ca.gov	TELEPHONE NUMBER 916 902-9291
DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400 Amend Sections 120.7 and 128, and add Section 120.8, T14, CCR re: Commercial Sea Urchin Fishing			NOTICE FILE NUMBER Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:
- | | |
|--|---|
| <input type="checkbox"/> a. Impacts business and/or employees | <input type="checkbox"/> e. Imposes reporting requirements |
| <input type="checkbox"/> b. Impacts small businesses | <input type="checkbox"/> f. Imposes prescriptive instead of performance |
| <input type="checkbox"/> c. Impacts jobs or occupations | <input type="checkbox"/> g. Impacts individuals |
| <input type="checkbox"/> d. Impacts California competitiveness | <input checked="" type="checkbox"/> h. None of the above (Explain below): |

[See addendum](#)

*If any box in Items 1 a through g is checked, complete this Economic Impact Statement.
If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.*

2. The _____ estimates that the economic impact of this regulation (which includes the fiscal impact) is:
(Agency/Department)
- ☐ Below \$10 million
☐ Between \$10 and \$25 million
☐ Between \$25 and \$50 million
☐ Over \$50 million *[If the economic impact is over \$50 million, agencies are required to submit a [Standardized Regulatory Impact Assessment](#) as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: _____

Describe the types of businesses (Include nonprofits): _____

Enter the number or percentage of total businesses impacted that are small businesses: _____

4. Enter the number of businesses that will be created: _____ eliminated: _____

Explain: _____

5. Indicate the geographic extent of impacts: ☐ Statewide
☐ Local or regional (List areas): _____

6. Enter the number of jobs created: _____ and eliminated: _____

Describe the types of jobs or occupations impacted: _____

7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? ☐ YES ☐ NO

If YES, explain briefly: _____

ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? \$ _____
- a. Initial costs for a small business: \$ _____ Annual ongoing costs: \$ _____ Years: _____
- b. Initial costs for a typical business: \$ _____ Annual ongoing costs: \$ _____ Years: _____
- c. Initial costs for an individual: \$ _____ Annual ongoing costs: \$ _____ Years: _____
- d. Describe other economic costs that may occur: _____
2. If multiple industries are impacted, enter the share of total costs for each industry: _____
3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements.
Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted. \$ _____
4. Will this regulation directly impact housing costs? ☐ YES ☐ NO
- If YES, enter the annual dollar cost per housing unit: \$ _____
- Number of units: _____
5. Are there comparable Federal regulations? ☐ YES ☐ NO
- Explain the need for State regulation given the existence or absence of Federal regulations: _____
- Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: \$ _____

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: _____
2. Are the benefits the result of: ☐ specific statutory requirements, or ☐ goals developed by the agency based on broad statutory authority?
- Explain: _____
3. What are the total statewide benefits from this regulation over its lifetime? \$ _____
4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: _____

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: \$ _____ Cost: \$ _____

Alternative 1: Benefit: \$ _____ Cost: \$ _____

Alternative 2: Benefit: \$ _____ Cost: \$ _____

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: _____

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? ☐ YES ☐ NO

Explain: _____

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises **exceed \$10 million**? ☐ YES ☐ NO

***If YES, complete E2. and E3
If NO, skip to E4***

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 1: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 2: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding \$50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented?

☐ YES ☐ NO

If YES, agencies are required to submit a [Standardized Regulatory Impact Assessment \(SRIA\)](#) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: _____

The incentive for innovation in products, materials or processes: _____

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: _____

FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

☐ a. Funding provided in _____
Budget Act of _____ or Chapter _____, Statutes of _____

☐ b. Funding will be requested in the Governor's Budget Act of _____
Fiscal Year: _____

☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

☐ a. Implements the Federal mandate contained in _____

☐ b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

☐ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

☐ e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

☐ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

☐ 3. Annual Savings. (approximate)

\$ _____

☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

☒ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

☐ 6. Other. Explain _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

It is anticipated that State agencies will:

☐ a. Absorb these additional costs within their existing budgets and resources.

☐ b. Increase the currently authorized budget level for the _____ Fiscal Year

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any State agency or program.

☐ 4. Other. Explain _____

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

☐ 4. Other. Explain _____

FISCAL OFFICER SIGNATURE

DocuSigned by:
 Dan Reagan
6558B761E2D347D

DATE

2/21/2025

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY

 Melissa A. Miller-Henson Bryan Cash

2/24/2025

DATE

02/21/2025

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER

 _____

DATE

STD. 399 Addendum
Amend Sections 120.7 and 128, and Add Section 120.8
Title 14, California Code of Regulations
Regarding Commercial Sea Urchin Fishing and
Commercial Take of Sea Cucumber

The California Fish and Game Commission (Commission) proposes changes to commercial sea urchin fishery regulations; the last major amendments were in 2017. The proposed amendments represent a cumulation of California Department of Fish and Wildlife (Department) internal discussions, a regulation change petition from the California Sea Urchin Commission (CSUC), and additional input from CSUC, the Nature Conservancy, and Reef Check California. The proposed changes are necessary to help build resilience and create more opportunities and flexibility for the commercial sea urchin fishery.

Proposed Regulatory Actions

The proposed regulation changes will allow commercial fishermen without a sea urchin crewmember permit to assist sea urchin divers, remove a seasonal Friday prohibition in the northern portion of the fishery, reduce the spatial size of a sea urchin closure, and improve clarity and efficiency of existing sea urchin regulations.

Allow Commercial Fishermen to Support Sea Urchin Divers

Existing regulations prohibit any person without a sea urchin permit from supporting a sea urchin diver while fishing. The proposed regulation would remove this restriction and allow anyone with a commercial fishing license to assist a sea urchin diver harvesting urchins. To ensure compliance and enforceability of all participants on a sea urchin trip, a new provision is being added to address accountability should a violation occur during a trip where multiple persons are on board a vessel supporting the fishing operation.

Remove Friday Prohibition in the North from June through October

Current regulations prohibit commercial red sea urchin harvest on Fridays, Saturdays, and Sundays from June through October north of the Monterey-San Luis Obispo county line, and on Saturdays and Sundays from June through October south of that line. CSUC submitted a petition in May 2023 requesting that Fridays be available to the northern commercial sea urchin fishery to allow for more good weather options, increased market opportunities, and more days to harvest red sea urchins.

Remove Caspar Point Sea Urchin Closure

The CSUC petition also requests to eliminate the sea urchin take prohibition at South Caspar Point, a closure established in 1989. The petition suggests that the closure is no longer necessary because there is adequate protection for sea urchins in the adjacent Point Cabrillo State Marine Reserve (established in 2012), opening the closure will not result in a further loss in harvestable sea urchins, and sea urchin harvest will not interfere with ongoing kelp restoration activities. Opening the area would be beneficial to the commercial fishery while eliminating redundancy of the protections in the adjacent marine protected area.

Increase Clarity and Efficiency

Additional changes are proposed to improve clarity and efficiency of the existing regulations. Key items addressed in the proposed amendments include:

- Clearly defining permitted activities of each sea urchin permit type
- Improving the description of size limit restrictions and measurement methods
- Splitting Section 120.7 into two sections to group regulations relating to permits in one section (120.7), and regulations that govern the fishery into another section (120.8).
- Updating Section 128, commercial take of sea cucumber, to reflect the proposal to incorporate by reference the commercial dive fishing log currently in Section 120.8.
- Revising the commercial dive fishing log form to update the form number, update the revision date, provide separate fields for “port” and “dealer,” add instructions for requesting new logbooks, update the example of a completed form, and other minor edits.

Additional changes are proposed to the structure of the sections, making it easier to read and understand for commercial fishermen. These changes, along with renumbering subsections, will not have any regulatory impact.

Economic Impact Statement

A. Estimated Private Sector Cost Impacts

Answer: 1. h. None of the above

The Commission anticipates that the proposed regulatory action will have negligible economic impacts on businesses and small businesses that operate in the commercial sea urchin industry; it expects the overall effect on the industry and the fishery to be economically neutral.

Existing regulations prohibit any person without a sea urchin permit from supporting a sea urchin diver while fishing. The proposed regulation would remove this restriction and allow anyone with a commercial fishing license to assist a sea urchin diver harvesting urchins. Removing this restriction is not anticipated to affect the wage rate for workers in the commercial sea urchin industry due to it not affecting the fees related to the applicable permit and commercial fishing license, nor is it anticipated to affect any of the costs related to commercial sea urchin harvest.

Additionally, including Fridays in the northern commercial sea urchin fishery to allow for more good weather options, increased market opportunities, and more days to harvest red sea urchins, is expected to allow for more flexibility, which should not impact the costs associated with harvesting sea urchins in an adverse or beneficial way. Opening the current closure at Caspar Point will not result in a further loss in harvestable sea urchins while maintaining harvest opportunities for fishers in that location.

Finally, the proposed regulatory changes to improve the structure of Section 120.7 will make the regulations easier to read and understand for commercial fishermen and will not have any beneficial or adverse economic impact on the fishery due to the changes being non-substantial that do not affect the nature of the regulations.

Fiscal Impact Statement

A. Fiscal Effect on Local Government

Answer: 5. No fiscal impact.

The Commission anticipates that the proposed regulatory action will have no fiscal effect on any local government entity or program.

B. Fiscal Effect on State Government

Answer: 3. No fiscal impact.

The Commission anticipates that the proposed regulatory action will have no fiscal effect on state government. The Department has determined that the proposed regulatory action will not affect the Department's existing level of staff effort involved in monitoring the permitting program or law enforcement activities, nor would this action increase or decrease license or other fee revenue.

Additionally, no other state agencies or programs would be affected by this emergency regulatory action.

C. Fiscal Effect on Federal Funding of State Programs

Answer: 3. No fiscal impact.

The proposed regulatory action will not have a fiscal effect on federal funding of state programs.



Notice: Regulation Change Considerations Commercial Sea Urchin

13 February 2025

Presented to:

**California Fish and Game
Commission**

Presented by:

**Joanna Grebel
Invertebrate Program Manager
Marine Region**



Overview

- Background
- Overview of proposed changes
- Outreach efforts
- Timeline



Photo Credit: CDFW



Background

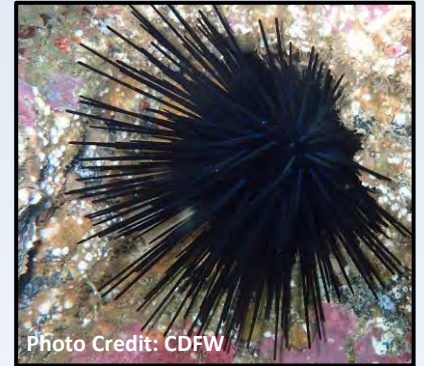
- Fishery began in 1970s
- Commercially harvested for “uni”
- Divers use surface supplied air (hookah) or SCUBA
- Fishery occurs in southern California and Mendocino / Sonoma Counties





Background (Cont.)

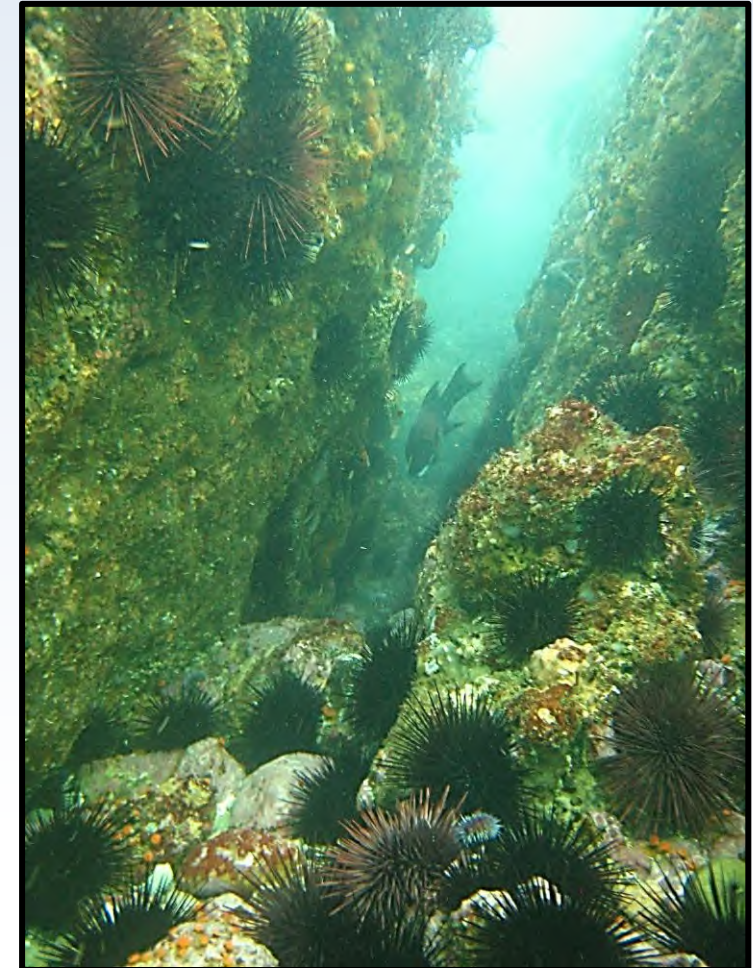
- Limited entry fishery with a capacity reduction
- Managed by size limits and seasonal closures
- Landings over last decade declined due to loss of kelp
- Co-management with California Sea Urchin Commission





Proposed Changes

1. Allow commercial fishermen to assist sea urchin divers
2. Modify seasonal closure in the North
3. Modify South Caspar Point Sea Urchin Closure Area
4. Streamline regulations
5. CDFW proposed regulations





1) Allow Commercial Fishermen to Assist Sea Urchin Divers

Background

- Current regulations only permit a Sea Urchin Crewmember to assist a sea urchin diver
- Allowing commercial fishermen to assist divers will increase available pool of assistants and increase safety
- Fish and Game Code 9054.5 – effective January 1, 2024





1) Allow Commercial Fishermen to Assist Sea Urchin Divers (Cont.)

	<u>Current Permits</u>		<u>Proposed (MRC)</u>	<u>New Option</u>
	DIVING	CREWMEMBER	DAILY Permit	Comm. License
Permit Access	Limited Entry	Open Access	Open Access	Open Access
Take and Sell Sea Urchin	✓	✗	✗	✗
Assist Fishing Operations	NA	✓	✓	✓
Comm. Fishing License	✓	✓	✓ ✗	✓
Permit Fees	✓	✓	✓	✗
Lottery Preference Points	NA	✓	✗	✗



2) Modify Seasonal Closure in North

- Current regulation: prohibits red sea urchin take Friday-Sunday, north of the Monterey-San Luis Obispo county line (June-October)
- New regulation: prohibits red sea urchin take Saturday-Sunday, north of the Monterey-San Luis Obispo county line (June –October)





3) Modify South Caspar Point Sea Urchin Closure Area



South Caspar Point closure (1989)

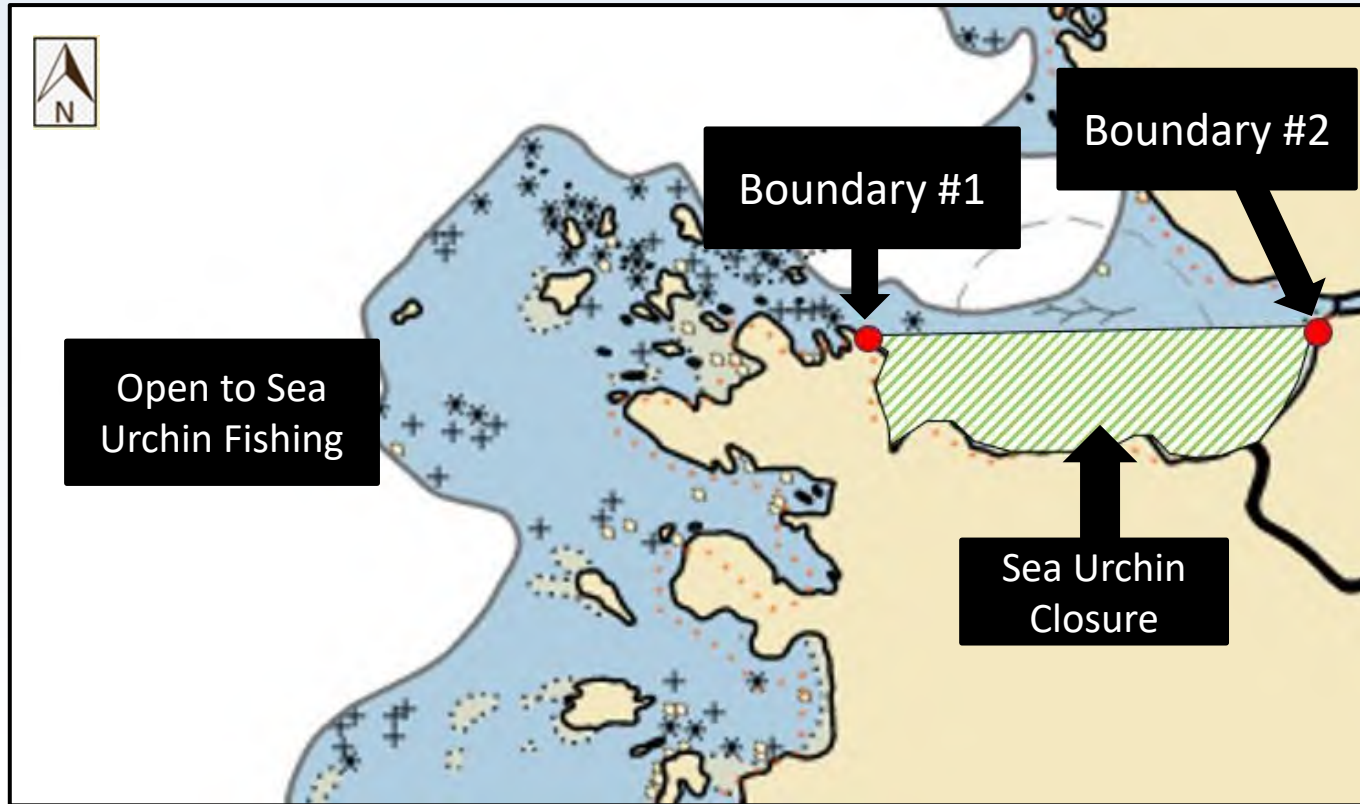
- Small area, 0.19 sq. mi.
- Created as a red sea urchin refuge and study area
- Prohibits only commercial sea urchin harvest

Point Cabrillo (1975 Reserve)

- Larger area, 0.44 sq. mi.
- Became SMR (fully protected) in 2012



3) Modify South Caspar Point Sea Urchin Closure Area (Cont.)



- Opens coastal area
- Maintains existing closure in the bay until April 2029



4) Streamline Regulations

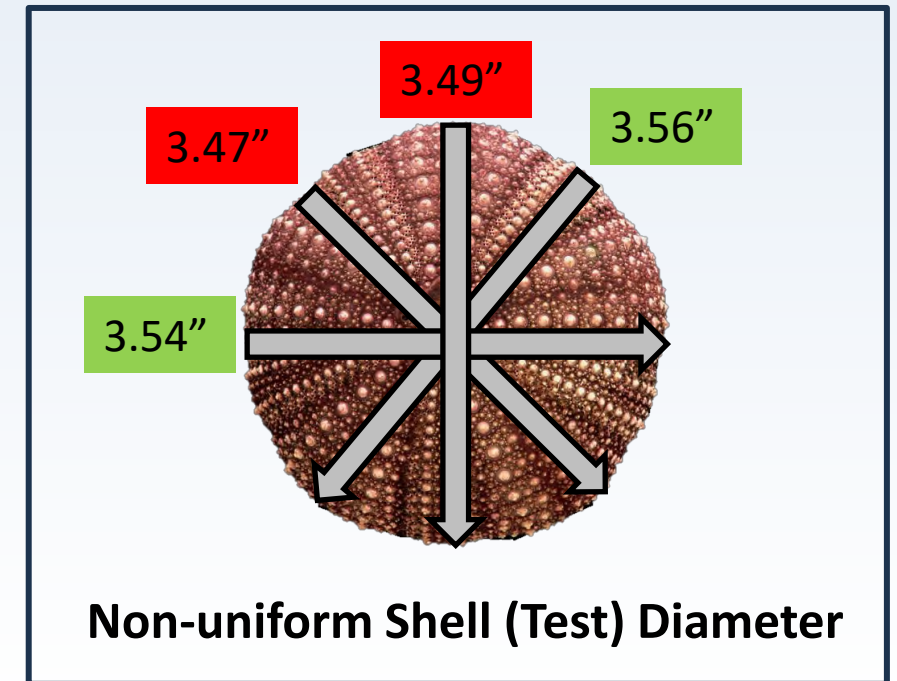
Divide Title 14, CCR § 120.7 into two sections:

- § 120.7 – Permits and how they are managed (e.g., types, exceptions, renewals, etc.)
- § 120.8 – Fishery Management Measures (e.g., fishing season, size limits, other restrictions/requirements, etc.)



5) CDFW Proposed Regulation Changes

- Clarify method of measurement
 - Old language: shell diameter not including the spines or any portion of the ball-and-socket attachment to the shell
 - New language: greatest shell diameter not including the spines
- Add accountability provision





Outreach Efforts

- MRC Meetings: March 2024 and July 2024
- Tribal Notification: August 2024
- CSUC Meetings: March 2024, October 2024, and November 2024





Timeline

- FGC Meetings:

Notice: February 13, 2025 (Today)

Adoption: April 17, 2025

- Expected Effective Date: July 2025

Thank You



Questions:

AskMarine@wildlife.ca.gov

April 2025 FGC Meeting - 120.7 sea urchin regs - Email PSOR

From Maxey, Samara [REDACTED]
Date Fri 03/21/2025 01:18 PM
To FGC <FGC@fgc.ca.gov>
Cc Grebel, Joanna [REDACTED] Owens, Brian [REDACTED]
[REDACTED] Ashcraft, Susan [REDACTED]

Good Afternoon,

The Department of Fish and Wildlife is submitting this email to notify the California Fish and Game Commission that there have been no substantive comments received, amendments to the proposed regulatory text, or additional information gathered for the proposed 120.7 Commercial Sea Urchin Fishing rulemaking since the filing of the Initial Statement of Reasons. Therefore, this email is prepared in lieu of a PSOR.

Please let me know if you have any questions.

Thank you,

Samara Maxey (she/her)

Staff Services Manager I, Marine Region
Department of Fish and Wildlife
1010 Riverside Parkway
West Sacramento, CA 95605

Regarding Sea Urchins regulations

From jefferey baldwin <[REDACTED]>

Date Thu 02/13/2025 10:13 AM

To FGC <FGC@fgc.ca.gov>

Attention, Susan Ashcroft. My name is Jeff Baldwin I have a been Sea urchin Diver since early 70s . it is very important at this time to open closed areas for Sea Urchins harvest. , there are so many sea urchin in the closed areas they are Eating all the kelp. and now it is just Baron areas with no kelp beds. Also, we need to adjust the size limit to 3 inches in the Open areas we're We are working now . Thank you for your time and consideration on this matter . sincerely Jeff Baldwin. If you have any questions, please call or email me phone number [REDACTED] or [REDACTED]
[REDACTED]

Committee Staff Summary for November 6-7, 2024 MRC
For Background Purposes Only

7. Commercial Harvest of Marine Algae Sea Palm (*Postelsia*)

Today's Item

Information ☐

Action ☒

Receive and discuss Department-recommended regulations governing commercial harvest of sea palm; develop potential committee recommendation.

Summary of Previous/Future Actions

- | | |
|--|---|
| • MRC received updates on commercial kelp and algae harvest management review | 2015-2019; MRC |
| • Department presented initial draft regulations; MRC recommended additional outreach | March 2020; MRC |
| • Department proposed formation of stakeholder working groups, starting with bull kelp, followed by edible seaweeds; MRC recommendation, with Commission approval in December 2020 | November 2020; MRC |
| • Commission referred sea palm review to MRC | June 2021 |
| • Received Department overview of sea palm and recommendation to prioritize management review; MRC recommendation | March 2022; MRC |
| • Department provided TC an update on sea palm review | April 2022; TC |
| • Commission approved MRC recommendation to prioritize review of sea palm commercial harvest before other edible species | April 2022 |
| • TC received Department updates related to kelp and edible algae management | April 2022, August 2022, and April 2023; TC |
| • MRC received Department update on development of proposed changes to commercial harvest of marine algae sea palm | July 17-18, 2024; MRC and August 13, 2024; TC |

Background

Kelp and edible seaweed are managed with other marine algae through the Department's kelp management program. The Department and Commission have been working to revise antiquated commercial kelp regulations over more than ten years through a three-phase approach, to improve management and enforceability. Phase 1 was completed in 2013 and implemented in 2014; Phase 2 has been underway since late 2016.

Phase 2 is focused on both regulatory clean-up and broader management and regulation overhaul in consultation with commercial kelp and algae (seaweed) harvesters. Originally planned for completion in 2020, the Commission subsequently approved continuing Phase 2 while the Department worked more directly with growers and other interested stakeholders on proposed changes.

Committee Staff Summary for November 6-7, 2024 MRC
For Background Purposes Only

In November 2020, the Department proposed to form two separate working groups — one for bull kelp harvest and one for edible seaweeds harvest — to collaboratively develop regulation change proposals, including regional approaches, harvest methods, and data needs. MRC recommended and the Commission prioritized bull kelp harvest review first, in light of bull kelp condition and recovery needs on the north coast. The commercial kelp harvest review and associated rulemaking effort was completed in 2021. The next part to review regulations for commercial harvest of all edible seaweed species, including sea palm, was initiated in 2022.

Reviewing Commercial Harvest of Sea Palm (Postelsia)

During the Commission's May 2021 meeting, a commenter expressed concern about long-term monitoring data sets documenting declines in abundance of *Postelsia*, a marine algal species known as sea palm that is commercially harvested as edible seaweed. The commenter advocated for immediate focus on protecting sea palm. In July 2021, the InterTribal Sinkyone Wilderness Council — a consortium of ten federally-recognized tribes in northern California — proposed a 10-year moratorium on commercial harvest of bull kelp, giant kelp, and sea palm.

The Commission referred the topic of commercial harvest of sea palm to the March 2022 MRC meeting, to consider whether to prioritize sea palm harvest review ahead of the review of other edible seaweed species. At the March meeting, the Department presented an overview of sea palm distribution and harvest. In light of public, tribal, and Department reporting, MRC recommended prioritizing commercial sea palm harvest review before other edible species; in April 2022, the Commission approved the recommendation.

Update

The Department has evaluated data, researcher and harvester information, and management needs for sea palm since its review was prioritized. Today, the Department will present an overview of sea palm harvest over 20 years and information about sea palm density across the state (Exhibit 1); it will also present proposed changes to both sea palm regulations and all marine algae for MRC consideration and potential recommendation. Proposed sea palm regulation changes are to: (1) define allowable harvest methods; (2) require central latitude/longitude coordinates of harvest location; and (3) prohibit harvest in the southern portion of the species' range (south of Pigeon Point, San Mateo County). Additionally, the Department will propose amendments to regulations for all marine algae, to require that harvesters: (1) identify the day of harvest in harvest reporting; (2) specify if take is "drift" or "beached"; (3) include additional information on harvest effort (details will be shared during the meeting); and (4) clarify language and update outdated references.

The Department will also highlight its outreach to and engagement with sea palm harvesters, researchers, and the public when exploring management options. Department staff provided updates at Commission Tribal Committee meetings in 2022, 2023 and 2024, sent tribal notification letters in the fall of 2024, and reached out directly to tribes and tribal councils that previously expressed interest. To date, the Department has not received feedback from any tribes.

Significant Public Comments (N/A)

Committee Staff Summary for November 6-7, 2024 MRC
For Background Purposes Only

Recommendation

Commission staff: Advance for consideration in a rulemaking the proposed changes to commercial harvest of sea palm on a timeline to commence with authorizing public notice in February, as recommended by the Department.

Department: Advance to rulemaking for public notice in February 2025 proposed regulation changes for commercial sea palm harvest to: (1) define allowable harvest methods; (2) require central latitude/longitude coordinates of harvest location; and (3) prohibit harvest in the southern portion of its range (south of Pigeon Point, San Mateo County). In the same rulemaking, include regulation changes for commercial harvest of all marine algae to: (1) identify the day of harvest in harvest reporting; (2) specify if take is “drift” or “beached”; (3) include additional information on harvest effort, as described today; and (4) clarify language and update outdated references.

Exhibits

1. Department presentation

Committee Direction/Recommendation

The Marine Resources Committee recommends that the Commission advance to rulemaking the proposed regulation changes as recommended by the Department, and schedule the rulemaking to commence with authorizing public notice in February 2025.

Staff Summary for February 12-13, 2025
For Background Purposes Only

21. Commercial Harvest of Kelp, Including Sea Palm, and Other Aquatic Plants

Today's Item

Information ☐

Action ☒

Consider authorizing publication of notice of intent to amend regulations for commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and references.

Summary of Previous/Future Actions

- | | |
|--|--|
| • Commission referred sea palm review to Marine Resources Committee (MRC) | June 16-17, 2021 |
| • MRC and Tribal Committee (TC) discussed status of sea palm and harvest | March 24, 2022; MRC and April 19, 2022; TC |
| • Commission approved MRC recommendation to prioritize sea palm commercial harvest before other edible seaweed species | April 20-21, 2022 |
| • MRC vetting and recommendation | November 6-7, 2024; MRC |
| • Today's notice hearing | February 12-13, 2025 |
| • Discussion and adoption hearing | April 16-17, 2025 |

Background

Kelp and edible seaweed are managed with other marine algae through the Department's kelp management program under regulations adopted by the Commission. The Department and Commission have been working to revise antiquated commercial kelp and seaweed regulations for over ten years through a multi-phase approach, to improve management and enforceability. There have been two rulemakings to date (2013 and 2022).

In 2022, the Commission supported an MRC recommendation to prioritize review of sea palm (*Postelsia palmaeformis*), which is classified as a type of edible seaweed, following observed declines in the species in some areas of the coast. Following two years of Department review, in November 2024 the Department presented its findings and management recommendations to MRC (see Exhibit 1 for background details). In December 2024, MRC recommended the Commission move forward with a rulemaking to commence in February 2025 (this meeting).

Current Regulations

The Department requests changes to commercial kelp and aquatic plant harvesting regulations (including edible seaweed), as described in the draft initial statement of reasons (ISOR) and draft proposed regulatory language (exhibits 3 through 5).

Current sea palm regulations provide that anyone with a commercial kelp harvesting license may harvest sea palm by cutting and picking attached individuals and taking drift or loose individuals. However, current regulations do not include defined, specific, allowable harvest methods or set harvest limits or seasonal closures for sea palm commercial harvest.

Additionally, current kelp and aquatic plant regulations incorporate by reference the Kelp Harvesting License and Drying Application (DFW 658), the Commercial Kelp Harvester's

Staff Summary for February 12-13, 2025
For Background Purposes Only

Monthly Report (DFW 113), and the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) forms.

Proposed Regulation Changes

1. Define sea palm harvest methods, to:
 - specify the allowable sea palm harvest cut location, determined by locating the grooved area on the blade and cutting the blade at least one and one-half inches away toward the terminal tip of the blade; and
 - prohibit harvest of detached, drift, or beached sea palm.
2. Restrict incidental take of marine invertebrates when harvesting sea palm, to:
 - prohibit the incidental take and possession of marine invertebrates greater than or equal to one inch in width; and
 - require that harvested sea palm be inspected prior to transport for marine invertebrates less than one inch in width and, unless otherwise prohibited, allow the incidental take of marine invertebrates less than one inch in width if effort is made to return them near their habitat of origin.
3. Prohibit sea palm harvest from Pigeon Point to the United States-Mexico border.
4. Revise forms DFW 113 and DFW 113A monthly reports to:
 - require that, for sea palm harvest, Form DFW 113A monthly reports include the central latitude/longitude coordinates where sea palm was harvested; and
 - require that, for all marine algae harvest, forms DFW 113 and DFW 113A monthly reports include the day of harvest, specify if take is "drift" or "beached" (except as prohibited for sea palm), and include additional information on harvest effort.
5. Remove from Title 14 the incorporation by reference of Form 658 and, instead, list the required form fields in text format.
6. Make other edits to the regulations and forms for clarity and consistency.

Significant Public Comments (N/A)

Recommendation

Commission staff: Authorize staff to publish notice of the Commission's intent to amend regulations for commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and references, as recommended by the Department, and described in the draft ISOR and draft proposed regulatory language (exhibits 3 through 5).

Committee: Advance to rulemaking the proposed regulatory changes as recommended by the Department and request that the Department continue exploring density trends in Humboldt and Sonoma counties by reaching out to harvesters in the area (approved by Commission in December).

Department: Authorize staff to publish notice of the Commission's intent to amend regulations for commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and

Staff Summary for February 12-13, 2025
For Background Purposes Only

references, as described in the draft ISOR and draft proposed regulatory language (exhibits 3 through 5).

Exhibits

1. Staff summary from Agenda Item 7, November 6-7, 2024 MRC meeting (*for background purposes only*)
2. Department memo, received January 24, 2025
3. Draft ISOR, dated January 30, 2025
4. Draft proposed regulatory language
5. Draft proposed changes to forms DFW 113, 113A and 658
6. Draft economic and fiscal impact statement (STD 399) and addendum
7. Department presentation

Motion

Moved by _____ and seconded by _____ that the Commission authorizes publication of a notice of its intent to amend sections 165 and 705.1 and forms DFW 658, 113 and 113A related to the commercial harvest of sea palm, and kelp and other aquatic plants harvest reporting and references.

Memorandum

Date: January 16, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Initial Statement of Reasons for February 12-13, 2025 Fish and Game Commission Meeting to Amend Sections 165 and 705.1, Title 14, California Code of Regulations, re: Commercial Harvest of Kelp and Other Aquatic Plants; Commercial Kelp Harvesting and Drying Application, Monthly Harvest Reports**

Please find attached the Initial Statement of Reasons to amend sections 165 and 705.1, and forms DFW 658, DFW 113, and DFW 113A, Title 14, California Code of Regulations. The proposed amendment aims to mandate allowable commercial harvest methods for the marine alga sea palm (*Postelsia palmaeformis*), close sea palm harvest from Pigeon Point, San Mateo County south to the United States-Mexico border, require central latitude/longitude coordinates for sea palm harvest, and restrict incidental take of marine invertebrates.

The project will also provide clarifying edits and reference updates to the Kelp Harvesting License and Drying Application (DFW 658), remove DFW 658 from Title 14 incorporation by reference, and instead list those DFW 658 form fields in Section 705.1, which will negate the need for annual regulation updates to the application form. Additionally, the project will provide updates to the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) and the Commercial Kelp Harvester's Monthly Report (DFW 113) to include harvest reporting changes for commercial harvest of all marine algae to identify the day of harvest in harvest reporting, specify if take is "drift" or "beached", include additional information on harvest effort, and clarify language and update outdated references in the license application, reports, and sections 165 and 705.1.

The Department recommends that the new regulations become effective January 1, 2026, with the exception of regulations in subsection 705.1(a) regarding the application form and fee, which the Department requests to be effective upon filing with the Secretary of State to allow for immediate use since the current application form and fee pertain to the 2023 license year.

If you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager at R7RegionalMgr@wildlife.ca.gov. The notice should identify the Department point of contact for this regulation as Environmental Scientist Rebecca Flores Miller, who can be reached at kelp@wildlife@ca.gov.

Melissa Miller-Henson, Executive Director
Fish and Game Commission
January 16, 2024
Page 2

ec: **Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Eric Kord, Assistant Chief
Law Enforcement Division

Craig Shuman, D. Env., Region Manager
Marine Region

Kirsten Ramey, Env. Program Manager
Marine Region

Ona Alminas, Env. Program Manager
Regulations Unit
Wildlife and Fisheries Division

Garrett Wheeler, Attorney
Office of General Counsel

Daphne Nandino, Regulatory Scientist
Regulations Unit
Wildlife and Fisheries Division

Fish and Game Commission

David Thesell, Deputy Executive Director

Susan Ashcraft, Marine Adviser

Sherrie Fonbuena, Analyst

State of California
Fish and Game Commission
Initial Statement of Reasons for Regulatory Action

Amend Sections 165 and 705.1
Title 14, California Code of Regulations

Re: Commercial Harvest of Kelp and Other Aquatic Plants; Commercial Kelp Harvesting and Drying
Application, Monthly Harvest Reports

I. Date of Initial Statement of Reasons: January 30, 2025

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing:

Date: February 12-13, 2025

Location: Sacramento

(b) Discussion & Adoption Hearing:

Date: April 16-17, 2025

Location: Sacramento

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

Background

Sea palm (*Postelsia palmaeformis*) is an annual kelp marine alga that is managed in Section 165, Commercial Harvesting of Kelp and Other Aquatic Plants, within subsection (e) marine plants harvested as human food and classified as edible seaweed.

Sea palm lives in the upper-mid intertidal zone and is exposed to heavy wave action. The species consists of a holdfast which attaches the individual to its substrate, a long stipe, and branches with blades that are located on top of the individual. Reproductive spores develop on the blades in late spring to early summer, which are released from the blades during low tide resulting in a limited dispersal of one to five meters. Sea palm is commercially harvested for use as human food. Figure 1 depicts reported statewide commercial sea palm harvest during 2004 through 2023. The majority of sea palm harvested on an annual basis is north of San Francisco, including 97 percent of statewide take within Mendocino County. Since 2020, commercial sea palm harvest has declined statewide, and the number of commercial harvesters has also declined since 2021.

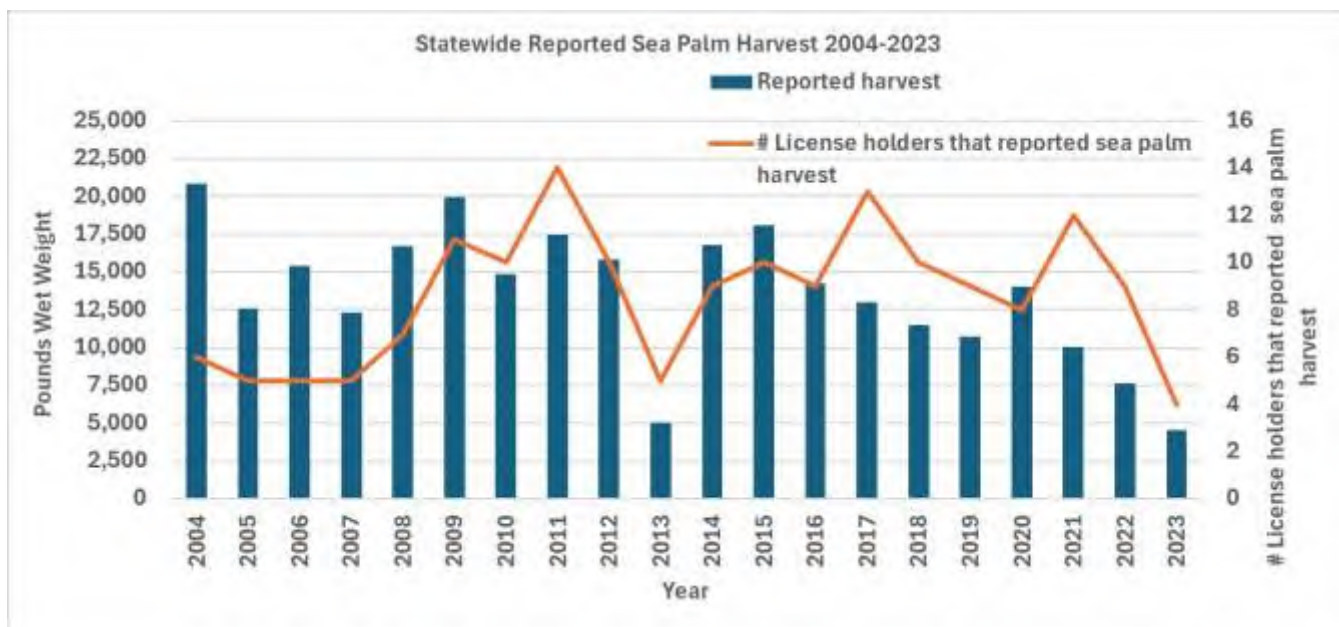


Figure 1. Annual statewide reported commercial sea palm harvest, 2004-2023. The axis on the left is harvest pounds wet weight as indicated by the bars and right axis depicts the number of harvesters who reported sea palm harvest during the year, as visualized in the line. Years 2013 and 2023 may not be an indication of reduced harvest efforts, but instead a lack of submitted harvest reports for these years in particular. Data source: Submitted California Department of Fish and Wildlife Edible Seaweed/Agarweed Harvester's Monthly Reports.

Sea palm can be susceptible to overharvest due to its morphology, limited spore dispersal, annual life cycle, and existing allowable harvest methods which allow cutting and picking of attached individuals and taking of drift and loose individuals. However, research suggests specific harvest methods may allow for blade regrowth and may help mitigate potential overharvest concerns.

Additionally, there is concern for the species based on long-term fishery-independent data collected by the Multi-Agency Rocky Intertidal Network (MARINe). MARINe is a partnership of universities, agencies, and private groups which conduct long-term monitoring of rocky intertidal ecosystems on the United States west coast. Although not all sea palm populations are monitored statewide and not all MARINe sea palm monitoring sites are monitored annually, the MARINe dataset is a robust tool to detect changes over time for the species monitored and is the best available fishery-independent data source for sea palm in California that the California Department of Fish and Wildlife (Department) is aware of. The sea palm long-term monitoring sites were selected because they supported high densities of sea palm. The eight MARINe monitoring sites in Figure 2 were chosen because they have data before and after the Northeast Pacific Marine Heatwave (MHW) that began in mid-2014 (through 2016).

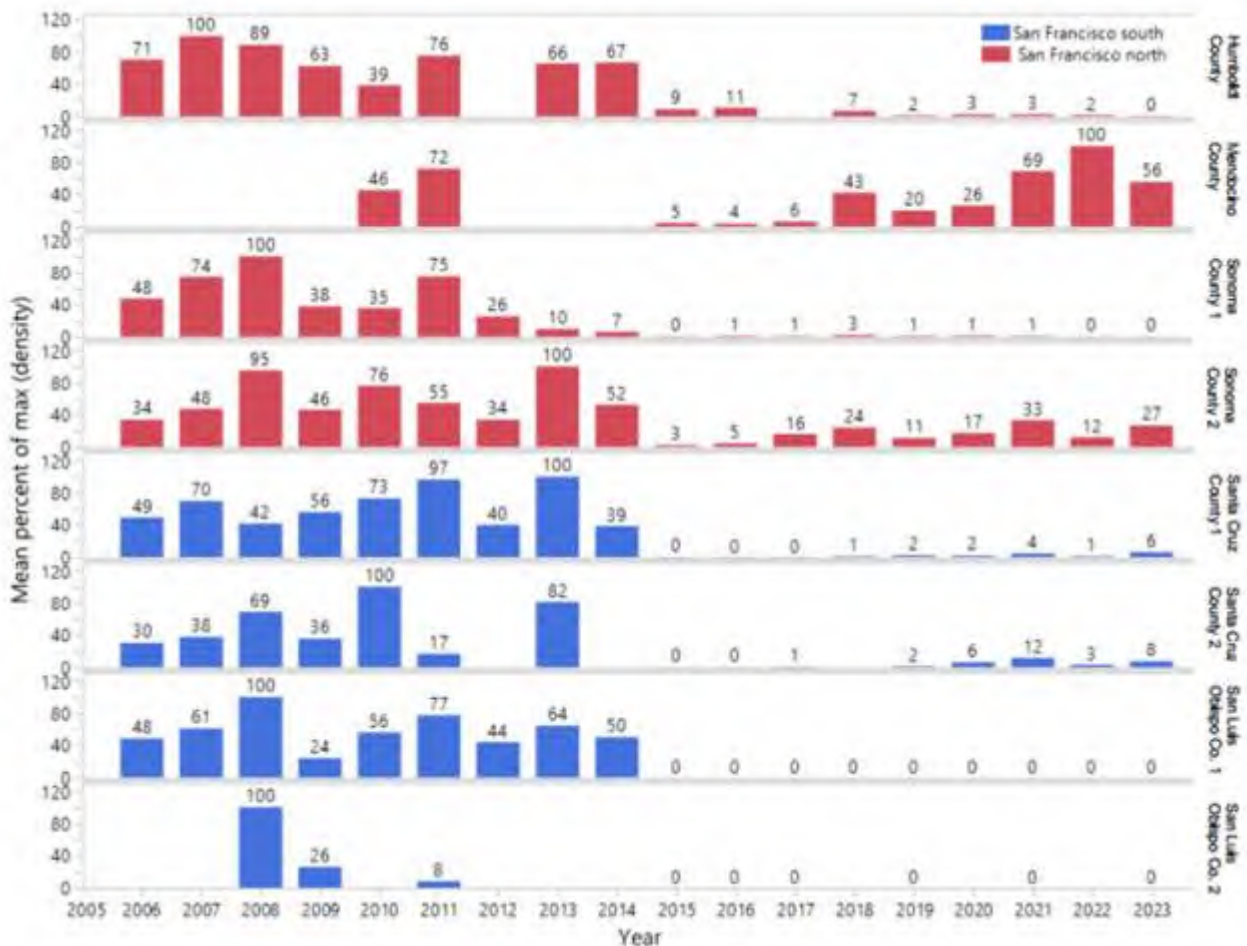


Figure 2. Multi-Agency Rocky Intertidal Network annual long-term sea palm monitoring at eight sites within the specified counties during the 18-year period between 2006 and 2023. The graphs are in descending order from north to south with the top four graphs representing sites north of San Francisco depicted in red and the lower four graphs representing sites south of San Francisco depicted in blue. The left axis is the mean percent of maximum density at the site as represented in the bars each year, with the corresponding percentage above each bar. Years without an associated number indicate the site was not monitored for a particular year. Zeros indicate no sea palm were at the monitoring site for the year. The right axis indicates a specific monitoring site in the county described. Figure source: Multi-Agency Rocky Intertidal Network.

MARINE monitoring data depicts a drop in sea palm density after 2014 at the annually monitored sites, with the most loss in its southern range, which coincides with the Northeast Pacific MHW that began in mid-2014. Additionally, MARINE monitoring shows slow recovery at most sites, especially in its southern range and a lack of recovery at some sites. Researchers have determined that sea palm loss is primarily due to the Northeast Pacific MHW, similar to the declines that have been documented in bull kelp along the north coast. Additionally, researchers at MARINE suspect sea palm's slow recovery at some sites may be partially due to an abundance of California mussels (*Mytilus californianus*) that outcompete for space.

Sea palm's historic range is from Hope Island at the northern end of Vancouver Island, British Columbia, south to the Morro Bay area in central California's San Luis Obispo County. However, sea palm's southern range has shifted north since 1984 with the most recent shift north during the 2014-2016 Northeast Pacific MHW to southern Big Sur in

Monterey County based on MARINe long-term monitoring sites and personal communication with Dr. Pete Raimondi, Principal Investigator for MARINe.

Current Regulations

The current regulations in Section 165 describe general licensing provisions for the commercial harvest of kelp and other aquatic plants. Although Section 165 provides regulations for kelp and other aquatic plants overall, it also contains subsections which provide more nuanced regulations depending on the species harvested and/or use of the harvest. Subsection (e) provides regulations pertaining to species harvested for human food and classified as edible seaweed including regulations specific to bull kelp harvest for human consumption. Sea palm is not specifically listed in current regulation but is an aquatic plant classified as edible seaweed and thus subject to the harvest regulations in subsection 165(e). Current allowable harvest methods for sea palm and other edible seaweed species include cutting and picking attached individuals and taking drift or loose individuals. All harvested individuals must be processed. There are no limits on the number of commercial Kelp Harvesting Licenses sold, and no harvest limits or seasonal closures for sea palm.

The current regulations in Section 705.1 list the permit fee and incorporate by reference the 2023 Kelp Harvesting License and Drying Application (DFW 658), the Commercial Kelp Harvester's Monthly Report (DFW 113), Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) and Release of Property (DFW 1108) forms.

Overview of Proposed Regulatory Changes

The Department has been gathering information on harvest considerations and compiling monitoring data, including conducting outreach to researchers and communications and harvest site visits to observe and learn from industry members. Most recently, in 2022 the Department accompanied three different commercial harvesters in the intertidal zone on separate occasions, to observe and learn about their sea palm harvest methods. Additionally, on October 16, 2024, the Department hosted a focused meeting with sea palm harvesters to discuss the available data and anticipated proposed regulatory changes, and to receive their feedback and recommendations. The Department largely received support for the proposed regulatory changes from the commercial harvest industry.

The proposed regulatory changes pertaining to partial range closure and blade cutting methods are the result of long-term monitoring and published literature. Specifically, Department staff have reviewed the sea palm [MARINe](#) long-term monitoring data and have had frequent discussions with MARINe's Principal Investigator to learn more about the monitoring data, concerns for the species, and research needs. Discussions have also occurred with the lead author of a [peer-reviewed paper](#) describing a partial blade cut approach to harvest that may allow for blade regrowth and may help mitigate potential overharvest concerns (Thompson et al. 2010). Discussions have also included the need for additional research on harvest methodologies.

Further outreach for the proposed regulatory changes included updates during multiple California Fish and Game Commission (Commission), and Commission Marine Resources Committee (MRC), and Tribal Committee (TC) meetings. Additionally, the Department

submitted a letter to California Tribes notifying them of the consideration to recommend amendments to the commercial harvest regulations and received comments from three tribes who responded that the proposed regulations were not within their Tribe's Traditional Use Area; further consultation is not required unless additional literature is provided or the scope of work changes; support of the Department's management of the commercial harvest of marine algae; and support of Tribal members' ability to harvest for subsistence purposes.

Additionally, Department staff met with two tribes to provide additional information on the proposed regulatory changes and to hear about Tribal concerns.

Based on MARINE long-term monitoring, sea palm researcher discussions, stakeholder conversations, and a lack of existing defined sea palm harvest methods in current regulations, the Department is recommending management changes to the commercial harvest of sea palm which are necessary to improve current and future management of this marine algae.

The proposed regulatory changes for sea palm define specific harvest methods for sea palm that allow for consistency of methods across all harvesters and potentially allows for the sea palm blades to regrow and reproduce. This proposed amendment defines a partial blade cut approach, to cut the blades a minimum of one and a half inches above the meristem (group of cells that divide rapidly to initiate growth). This proposed harvest method memorializes the current harvest methods utilized by the commercial sea palm harvesters and has received consensus support. Additionally, the Department is proposing to restrict the incidental take of marine invertebrate species during sea palm harvest as requested by the Department's Law Enforcement Division (LED).

To better manage the sea palm population, specific harvest location data is needed, and the Department is recommending to improve self-reported harvest log data through adding the requirement of reporting central latitude/longitude coordinates of harvest location.

Finally, the Department is recommending to prohibit sea palm harvest in the southern portion of its range from Pigeon Point in San Mateo County southward to the United States-Mexico border due to concerns around its loss and lack of recovery in that area at the southern end of its range. The Department's LED recommends using Pigeon Point, San Mateo County (37° 11' north latitude) as the northern boundary for closure to aid in enforcement of the regulations, and the Department has confirmed, based on the most recent harvest data, that there are no commercial harvesters who would be impacted by the proposed closure. Between 2004 and 2023, a single kelp harvester reported 0.5 pounds of commercial sea palm harvested between Pigeon Point, San Mateo County to the United States-Mexico border.

Updates to references and clarifying edits to the information required to be provided on the Kelp Harvesting License and Drying Application DFW 658 are recommended. New subsections in 705.1 will allow for the removal of the form (incorporated by reference) from Title 14 and negate the need for annual regulations updates to the form.

In addition to the proposed regulatory changes regarding sea palm, the Department is recommending amendments regarding the self-reported harvest information to improve

Department knowledge of commercial harvest methods and harvest efforts for all marine algae species including:

- Requiring the day of harvest on the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) for all harvested algae as is already required for bull kelp on the Commercial Kelp Harvester's Monthly Report (DFW 113).
- Specifying if take was "drift" or "beached" on both the DFW 113 and DFW 113A harvest reports. For the purposes of the reports, drift will be defined as detached in the water and beached defined as detached on the beach/rocks.
- Requiring additional information of species-specific harvest effort data by specifying the number of individuals harvesting each day and estimated harvest time in minutes on both DFW 113 and DFW 113A. The existing requirement of the number of individuals harvesting for all reported harvest during the report period will be retained.

Finally, the Department recommends clarifying regulatory language by referring individuals interested in marine algae collections for broodstock purposes to the appropriate regulations, updating outdated contact information to purchase a commercial Kelp Harvesting License and to receive copies of informational maps depicting administrative kelp beds and fishing blocks and monthly harvest reports, providing reference to an existing Fish and Game Code (FGC) section describing conditions under which a license can be revoked or not reissued, and other non-substantive changes for clarity and consistency.

Overall, the proposed regulatory changes will provide benefits to the sustainable management of marine algae resources and will provide necessary regulatory clarity and enforceability.

Specific Proposed Regulatory Changes

Section 165

Subsection (a): Current subsection (a) provides general license provisions. The proposed amendment adds language directing those taking kelp and other aquatic plants for broodstock purposes for aquaculture to Section 243. The proposed amendment is necessary to ensure members of the public understand that the commercial kelp license is not the appropriate permit for take of broodstock.

Subsection (a)(1)(B): Current subsection (a)(1)(B) provides regulations pertaining to a Drying Permit for agar-bearing marine plants. The proposed amendment retains the language in this subsection with the exception of replacing "Kelp Harvesting License and Drying Application (DFW 658) incorporated by reference in Section 705.1" with language specifying that the application is provided by the Department. This change is consistent with the proposed amendments to Section 705.1.

Subsection (a)(1)(C): Current subsection (a)(1)(C) directs individuals to contact the Department's Seal Beach office for license applications, informational maps depicting administrative kelp beds, informational maps of fishing blocks for edible seaweed and agar-bearing marine algae, and Monthly Harvest Reports. The proposed amendments separate this information into two subsections, revising subsection (a)(1)(C) and adding new

subsection (a)(1)(D). Subsection (a)(1)(C) is amended to refer those applying for a license for the first time to contact the Department's License and Revenue Branch (LRB) by phone or by email and directs individuals to the Department's online sales system to obtain subsequent licenses. Referring individuals to the Department's LRB is necessary as the Department's Seal Beach office no longer has staff to support license sales. Additionally, initial license sales require assistance from LRB staff to set up a harvester identification number and business customer profile Get Outdoors Identification (GO ID) number in the Automated License Data System (ALDS). Once a GO ID number is created in ALDS, licenses can be purchased directly through the Department's online license sales and services system.

Subsection (a)(1)(D): Proposed new subsection (a)(1)(D) specifies the Department's commercial kelp webpage as the source for informational maps depicting administrative kelp beds, fishing blocks, and Monthly Harvest Reports. Informational maps of administrative kelp beds, fishing blocks, and Monthly Harvest Reports are currently available for download from the Department's commercial kelp webpage. Referring individuals to the current source of these documents is necessary as the Department's Seal Beach office no longer has staff to print and mail the informational maps and Monthly Harvest Reports, or direct the public to the Department's commercial kelp webpage.

Subsection (a)(3): Current subsection (a)(3) specifies applicants for a Kelp Harvesting and Drying Permit shall complete the application and submit the application with the fee to the address listed on the application form, and states that applications may be submitted electronically upon the Department's establishment of an online submission system. The online submission system is currently available for use. Text specifying the "address listed on the application" will be retained and the language regarding online purchases is proposed to be modified from "Pursuant to Section 700.5, license applications and authorized fees may also be submitted electronically upon the department's establishment of an online submission system." to "Pursuant to Section 700.5, license applications and authorized fees may also be submitted electronically using the Automated License and Data System through the department's Online License Sales and Services website by applicants who have a GO ID number and previously acquired a Kelp Harvesting and Drying Permit." This change is necessary to ensure applicants are aware of the system already in place.

Subsection (a)(4): Current subsection (a)(4) provides license limitation references to FGC and Title 14 sections. The License Limitation title is retained in (a)(4) and the remaining language is proposed to be retained and moved to new subsection (a)(4)(A).

Subsection (a)(4)(A): Proposed new subsection (a)(4)(A) retains the license limitation language and references in existing subsection (a)(4) with the exception of the License Limitation title, and replaces "sections 6650-6680" with "sections 6650 through 6680".

Subsection (a)(4)(B): Proposed new subsection (a)(4)(B) refers to FGC Section 6656 which states provisions under which a Kelp Harvesting License may be revoked and reissuance may be prohibited for a period of not more than one year. The proposed subsection summarizes the language of Section 6656 to highlight existing law for the public and to aid in clarity and enforceability of the regulations.

Subsection (b). There are no proposed changes to subsection (b), General Harvesting Provisions.

Subsection (c)(2): Current subsection (c)(2) specifies allowable harvest methods for giant and bull kelp. The proposed amendment replaces “may not cut attached kelp...” with “shall not cut attached kelp...” This proposed amendment is necessary to clearly state allowable harvest methods for enforceability of the regulations.

Subsection (c)(9): Current regulations in subsection (c)(9) specify temporary harvest restrictions and weekly reporting for bull kelp. Non-substantive edits are proposed to remove the form number for the Kelp Harvesting License and Drying Application (subsections (c)(9)(B)1.a. and b.) consistent with amendments to subsection (a)(1)(B) and to correct the URL of the Department’s commercial kelp harvest webpage (subsections (c)(9)(B)2. and 3.).

Subsection (d). There are no proposed changes to subsection (d), Harvesting of marine plants of the genera *Gelidium*, *Pterocladia*, *Gracilaria*, *Iridaea*, *Gloiopeltis* or *Gigartina* which are classified as agar-bearing plants.

Subsection (e)(1)(A): Current subsection (e)(1)(A) describes allowable harvest methods for edible varieties of marine plants. The proposed amendments specify the allowable harvest methods do not pertain to sea palm and refer to subsection (e)(3)(A) for sea palm harvest methods.

Subsection (e)(3): Current subsection (e)(3) is renumbered as subsection (e)(4). The proposed new subsection (e)(3) specifies the current regulatory allowance of sea palm harvest is for human consumption only. This is necessary to maintain the current restriction specified in subsection (e) that the marine alga cannot be harvested for uses other than human consumption.

Subsection (e)(3)(A): Proposed new subsection (e)(3)(A) describes allowable and prohibited harvest methods for sea palm. The proposed language specifies that sea palm cannot be cut or harvested anywhere on the plant except as described in the subsection. The proposed new subsection describes allowable harvest cut location as determined by locating the grooved area on the blade and cutting the blade at least one- and one-half inches away towards the terminal tip of the blade. Further, the proposed regulatory language specifies harvesters may not take detached, drift, or beached individuals. Drift is defined as detached individuals floating in the water and beached is defined as detached individuals on the beach or rocks. The proposed harvest methods are necessary to allow for consistency of methods across all harvesters, and in ways that potentially allow for sea palm blades to regrow and reproduce. Restricting take of drift and beached sea palm is necessary to establish regulatory clarity and assists LED with enforceability of the regulations.

Subsection (e)(3)(B): Proposed new subsection (e)(3)(B) addresses incidental take of marine invertebrate species and specifies that no marine invertebrates one inch or greater in width shall be taken or possessed while harvesting sea palm. This size limit is necessary to prevent violations of marine invertebrate take regulations and to prevent retention of the species and potential unauthorized or illegal sale. The size limit helps enforcement efforts

by making it clear what constitutes a violation and addresses concerns from the Department's LED.

The proposed regulation recognizes that some invertebrates, particularly isopods, a type of marine crustacean, attach strongly to marine algae and their coloration can blend in with sea palm, leading to unintentional harvest. Isopods, even if larger than one inch in *length*, are generally less than one inch in *width*. The one inch width limit specifically addresses the potential for unintentional incidental take of these isopods while still achieving the broader intention of the subsection.

Further, the proposed regulation permits the incidental take of marine invertebrates less than one inch in width, provided that harvesters make a reasonable effort to return them to their habitat. The proposed language requires sea palm to be inspected for marine invertebrates less than one inch in width prior to transport. Unless take is otherwise prohibited, marine invertebrate species less than one inch in width may be incidentally taken if every effort is made to return them to their habitat of origin upon harvest. The one-inch width limit acknowledges the practical difficulty of completely eliminating the unintentional incidental take of small invertebrates that are otherwise on or within the blades during sea palm harvest. The phrase “unless take is otherwise prohibited” clarifies that existing FGC sections and regulations that prohibit take of a particular invertebrate species shall still apply, regardless of size.

Subsection (e)(3)(C): Proposed new subsection (e)(3)(C) describes the southern closure for sea palm: no sea palm may be cut, disturbed, or possessed from the 37° 11’ north latitude line at Pigeon Point in San Mateo County southward to the United States-Mexico border. Closure of sea palm harvest in its southern range is necessary due to concerns around sea palm’s loss and lack of recovery. The defined Pigeon Point, San Mateo County (37° 11’ north latitude) boundary is necessary to aid in enforcement of the regulations and is an easily identifiable location for harvesters to adhere to.

Subsections (e)(3) through (e)(6): Current subsections (e)(3) through (e)(6) are renumbered as subsections (e)(4) through (e)(7) with no additional changes.

Subsections (f) and (g). There are no proposed changes to subsections (f) and (g), All Other Species of Kelp and reference to the California Department of Public Health regulations, respectively.

Section 705.1

Subsection (a)(1): Current subsection (a)(1) references the 2023 Kelp Harvesting License and Drying Application DFW 658 (REV. 01/01/23). The proposed edits remove the specific license year and revision date. Existing language on the form, “It is mandatory to complete all items unless otherwise specified” is proposed for inclusion in subsection (a)(1) with an amendment changing “unless specified as voluntary” to “unless otherwise specified” to further clarify information required on the form as no fields are specified as voluntary. The removal of the license year and revision date and addition of new subsections (a)(1)(A) through (a)(1)(X) will allow for the removal of the form (incorporated by reference) from Title 14 and negate the need of annual regulation updates of the form to adjust the year and the fee amount.

Subsections (a)(1)(A) through (X): Proposed new subsections (a)(1)(A) through (X) retain current information data fields specified on the form DFW 658, proposed to be removed from incorporation by reference. The proposed new subsections, specifying the fields of a form to be issued by the Department, are described below:

Subsection (a)(1)(A): Proposed new subsection (a)(1)(A) requires the applicant to provide their first name, middle initial and last name.

Subsection (a)(1)(B): Proposed new subsection (a)(1)(B) requires the applicant to provide their ALDS Get Outdoors Identification number (Go ID#).

Subsection (a)(1)(C): Proposed new subsection (a)(1)(C) provides the opportunity for businesses to provide their business name to obtain the license for their business. If a business name is not provided, the license will be generated using the individual's name. The proposed language in this subsection is modified from the *Business Name* field on the current DFW 658 by adding "(Not required for individuals)" to clarify that, if a business name is not provided, the license will be generated using the individual's name.

Subsection (a)(1)(D): Proposed new subsection (a)(1)(D) requires the applicant to provide the name, place and date of incorporation. The proposed language in this subsection is modified from the *Name, Place, and Date of Incorporation* field on the current DFW 658 by adding "if applicable".

Subsection (a)(1)(E): Proposed new subsection (a)(1)(E) requires the applicant to provide their Harvester License number, unless it is their first license. The proposed language in this subsection is modified from the *Harvester License #* field on the current DFW 658 by correcting terminology from "application for a permit" to "application for a license".

Subsection (a)(1)(F): Proposed new subsection (a)(1)(F) requires the applicant to provide their mailing address, city, state, and zip code.

Subsection (a)(1)(G): Proposed new subsection (a)(1)(G) requires the applicant to provide their street address, city, county, state, and zip code.

Subsection (a)(1)(H): Proposed new subsection (a)(1)(H) requires the applicant to provide their email address.

Subsection (a)(1)(I): Proposed new subsection (a)(1)(I) requires the applicant to provide their daytime telephone number.

Subsection (a)(1)(J): Proposed new subsection (a)(1)(J) requires the applicant to provide their business telephone number.

Subsection (a)(1)(K): Proposed new subsection (a)(1)(K) requires the applicant to provide their gender and provides options of male, female, or nonbinary.

Subsection (a)(1)(L): Proposed new subsection (a)(1)(L) requires the applicant provide their date of birth.

Subsection (a)(1)(M): Proposed new subsection (a)(1)(M) requires the applicant to provide their hair color.

Subsection (a)(1)(N): Proposed new subsection (a)(1)(N) requires the applicant to provide their eye color.

Subsection (a)(1)(O): Proposed new subsection (a)(1)(O) requires the applicant to provide their height.

Subsection (a)(1)(P): Proposed new subsection (a)(1)(P) requires the applicant to provide their weight.

Subsection (a)(1)(Q): Proposed new subsection (a)(1)(Q) requires the applicant to provide their boat name, if a boat will be used. Or if a kayak will be used, requires the applicant to write “kayak.”

Subsection (a)(1)(R): Proposed new subsection (a)(1)(R) requires the applicant to provide the California vessel registration number for the boat used for harvest. The proposed language in this subsection is modified from the *California vessel registration number* field on the current DFW 658 by adding “(except kayak)” since under Department of Motor Vehicle regulations, kayaks are not required to have a registration number.

Subsection (a)(1)(S): Proposed new subsection (a)(1)(S) requires the applicant to provide the number of processing plants.

Subsection (a)(1)(T): Proposed new subsection (a)(1)(T) requires the applicant to provide the method of harvesting as hand or mechanical.

Subsection (a)(1)(U): Proposed new subsection (a)(1)(U) requires the applicant to provide the type(s) of aquatic plant(s) to be harvested as agar, edible seaweed, bull kelp, bull kelp for human consumption, or giant kelp.

Subsection (a)(1)(V): Proposed new subsection (a)(1)(V) pertains to drying permits and specifies that the applicant for the drying permit select this option if they choose to dry harvest pursuant to subsection 165(a)(1)(B). Completion of this field is not required if the applicant will not be drying harvest. The proposed language in this subsection is modified from the *drying permit* field on the current DFW 658 by correcting “section” to “subsection”.

Subsection (a)(1)(W): Proposed new subsection (a)(1)(W) requires the applicant to check a box to provide their verification that the applicant understands they must obtain a valid license from the Department once per year before the applicant begin harvesting kelp or other aquatic plants. The proposed language in this subsection is modified from the verification section on the current DFW 658 by removing “Seal Beach office” as the Department’s Seal Beach office is no longer staffed for license sales.

Subsection (a)(1)(X): Proposed new subsection (a)(1)(X) requires the applicant provide their signature and signature date indicating agreement to abide by all conditions of the Kelp Harvesting License and all laws and regulations of the FGC and the CCR, including FGC Sections 6650 through 6711 and CCR, Title 14, sections 165, 165.5, and 705.1. The applicant’s signature indicates that they are eligible for the Kelp Harvesting License and do not possess a license that is suspended or revoked, nor is there a case pending that would restrict them from obtaining a license. Further, the applicant’s signature certifies that the information provided is true and correct and if it is not, the license issued will be considered

invalid and must be surrendered to the Department and they will be subject to criminal prosecution pursuant to FGC Section 1054. Finally, their signature indicates they understand that, pursuant to FGC Section 6656, the license or permit may be suspended or revoked by the Commission for violations of any law or regulation relating to kelp. The proposed language in this subsection is modified from signature section on the current DFW 658 to clarify language about suspended or revoked licenses and reasons therefor, to add citations to FGC sections 1054 and 6656, and to make non-substantive edits.

Subsection (a)(2): Current subsection (a)(2) provides the permit fee for 2023. The proposed changes update the language from “permit” to the more accurate description, “license,” and update the license fee for 2025 to \$187.75 pursuant to FGC Section 713. Existing language is retained that specifies this amount does not include fees specified in subsection 700.4(e). See Attachment 1 for license fee calculations.

Subsection (b)(1): Current subsection (b)(1) referencing Commercial Kelp Harvester’s Monthly Report DFW 113 (REV. 01/01/23) is proposed to update the report revision date to REV. 04/17/25 for consistency with the form.

Subsection (b)(2): Current subsection (b)(2) referencing Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester’s Monthly Report DFW 113A (REV. 01/01/23) is proposed to update the report revision date to REV. 04/17/25 for consistency with the form.

Form DFW 658

The 2023 Kelp Harvesting License and Drying Application DFW 658 (REV. 01/01/23) is proposed to be removed from Title 14. Instead of incorporating the form by reference, the form fields are listed in proposed subsections 705.1(a)(1)(A) through (X).

Form DFW 113

To improve the Department’s knowledge of giant kelp and bull kelp harvest methods and provide information on kelp harvest effort, the Commercial Kelp Harvester’s Monthly Report DFW 113 (REV. 01/01/23) is proposed to undergo a complete strike and replace with DFW 113 (REV. 04/17/25):

1. The form revision date is proposed to be updated to reflect the date of the revised report form. The proposed 04/17/25 revision date is the date the proposed changes are anticipated to be adopted by the Commission.
2. Further details on the harvest method are proposed with the additional requirement for harvesters to specify if harvest was “drift” or “beached”. Additionally, “drift” is defined as “detached in the water” and “beached” is defined as “detached on the beach/rocks.”
3. The requirement to provide the number of individuals harvesting for the business each day of harvest of giant kelp or bull kelp is proposed to be added.
4. The estimated harvest time in minutes for each day of giant kelp or bull kelp harvest is proposed to be added.
5. An electronic signature ability and an acknowledgment that the electronic signature is legally binding and represents an execution or authentication of the form is proposed. The ability to use an electronic signature and the acknowledgement are required per the

Department's Office of General Counsel and allows for compliance with applicable accessibility laws including California Government Code sections 7405 and 11135, and the Web Content Accessibility Guidelines.

6. Non-substantive revisions are proposed to improve clarity of the proposed revised report and to comply with accessibility guidelines.

Form DFW 113A

To improve the Department's management of sea palm, knowledge of sea palm populations and harvest locations, marine algae harvest methods, and provide information on marine algae harvest effort, the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report DFW 113A (REV. 01/01/23) is proposed to undergo a complete strike and replace with DFW 113A (REV. 04/17/25):

1. The form revision date is proposed to be updated to reflect the date of the revised report form. The proposed 04/17/25 revision date is the date the proposed changes are anticipated to be adopted by the Commission.
2. The day of harvest for all harvested algae is proposed to be required. This requirement is consistent with the current (REV. 01/01/23) and proposed (REV 04/17/25) Commercial Kelp Harvester's Monthly Report DFW 113.
3. Central latitude/longitude coordinates of sea palm harvest are proposed to be required. Current forms DFW 113 and DFW 113A already require this data for bull kelp harvest.
4. Further details on the harvest method are proposed with the additional requirement for harvesters to specify if harvest was "drift" or "beached". Additionally, "drift" is defined as "detached in the water" and "beached" is defined as "detached on the beach/rocks."
5. The requirement to provide the number of individuals harvesting a specific species for the business for each day of harvest is proposed
6. The estimated harvest time in minutes for each day of harvest for the specified species is proposed.
7. An electronic signature ability and an acknowledgment that the electronic signature is legally binding and represents an execution or authentication of the form is proposed. The ability to use an electronic signature and the acknowledgement are required per the Department's Office of General Counsel and allows for compliance with applicable accessibility laws including California Government Code sections 7405 and 11135, and the Web Content Accessibility Guidelines.
8. Language clarification is proposed in the Log Instructions which reiterate existing reporting requirements to provide harvest reporting information for one species per row. The proposed amendment is necessary to clarify that combining harvest reporting information for multiple species is not permitted.
9. Non-substantive revisions are proposed to improve clarity of the proposed revised report and to comply with accessibility guidelines.

(b) Goals and Benefits of the Regulation

Under the Marine Life Management Act (MLMA), it is the policy of the state to ensure the conservation, sustainable use, and restoration of California's living marine resources for the benefit of all citizens of the state (FGC, Section 7050). Furthermore, FGC defines a fishery as one or more populations of marine fish or marine plants that may be treated as a unit for purposes of conservation and management and that are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics (FGC, Section 94). Sea palm and other marine algae are therefore considered a fishery.

The proposed specified harvest methods for sea palm allow for consistency of methods across all harvesters and potentially allow for the sea palm blades to regrow and reproduce consistent with the policy of the state that programs for the conservation and management of the marine fishery resources of California shall be established and administered to prevent overfishing, to rebuild depressed stocks, to ensure conservation, to facilitate long-term protection, and, where feasible, restoration of marine fishery habitats, and to achieve the sustainable use of the state's fishery resources [subdivision 7055(b) of the FGC] and that fisheries are conducted sustainably so that long-term health of the resources is not sacrificed in favor of short-term benefits [subdivision 7056(a) of the FGC]. Furthermore, a precautionary approach is warranted to protect and maintain the remaining sea palm due to sea palm's limited dispersal and apparent southern range contraction to southern Big Sur in Monterey County during the 2014-2016 Northeast Pacific MHW based on MARINe long-term monitoring sites and personal communication with Dr. Pete Raimondi, MARINe Principal Investigator.

Requiring sea palm harvest location reporting by central latitude and longitude coordinates will allow the Department to determine the more precise location of sea palm populations targeted for harvest to better inform management decisions for the species.

Finally, the proposed regulations will provide benefits to the sustainable management of marine algae resources and will provide regulatory clarity and enforceability.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Section 165

Authority cited: Sections 6653 and 6653.5, Fish and Game Code.

Reference: Sections 51, 6650, 6651, 6652, 6653, 6653.5, 6654, 6656 and 6680, Fish and Game Code.

Section 705.1

Authority cited: Sections 1050, 6651, 6653 and 6653.5, Fish and Game Code.

Reference: Sections 713, 1050, 6650, 6651, 6652, 6653 and 6653.5, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change:

The requirement to provide the central latitude and longitude locations of sea palm harvest will necessitate the harvester have GPS capability; however, no specific equipment for

such capability is prescribed. The requirement to provide specific harvest locations will improve the Department's ability to determine sea palm populations targeted for harvest on a finer scale than current reporting of fishing block number and the harvester determined nearest prominent landmark.

(e) Identification of Reports or Documents Supporting Regulation Change

Thompson, S. A., Knoll, H., Blanchette, C., Nielsen, K. J., 2010. Population consequences of biomass loss due to commercial collection of the wild seaweed *Postelsia palmaeformis*. Marine Ecology Progress Series 413:17-32.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication

Since 2021 the Department has updated the Commission, MRC and TC. Additionally, the Department has met with members of two Tribes.

- June 16-17, 2021, Commission meeting, Webinar/Teleconference;
- March 24, 2022, MRC meeting, Webinar/Teleconference;
- April 19, 2022, TC meeting, Monterey and Trinidad
- April 20, 2022, Commission meeting, Monterey and Trinidad
- August 16, 2022, TC meeting, Loleta
- July 18, 2024, MRC meeting, Santa Rosa
- August 13, 2024, TC meeting, Fortuna
- October 14, 2024, Notification of upcoming regulatory changes letters mailed to federally recognized Tribes
- October 16, 2024, Sea palm harvesters focus meeting (participants by invitation only), teleconference
- November 7, 2024, MRC meeting, Sacramento

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change

On October 16, 2024, the Department hosted a focused meeting with sea palm harvesters to discuss the initially proposed regulations and hear from the industry. During the meeting Department staff presented the proposed recommendation for a partial blade cut approach to sea palm based on published research which suggests specific harvest methods may allow regrowth. Additionally, the Department identified that the current sea palm industry employs a partial blade cut approach for sea palm harvest. The partial blade cut approach proposed by the Department specified using a sharp cutting tool to cut the blades one and one-half inches above the meristem, with the allowable harvest cut location to be determined by locating where the branch meets the blade, then locating the area where the blade widens and cut one- and one-half inches or greater away above the widening.

During the discussion an alternative approach was provided by meeting participants to use the start of the grooved area on the blade instead of the widened area on the blade to determine the location of the cut. The majority of participants agreed this was an appropriate alternative, although one participant initially expressed hesitation to using the grooved area to determine location of the cut. However, during a subsequent separate

conversation, they had no objections to using the widened area of the blade or using the start of the grooved area of the blade. Additionally, participant consensus during the focus meeting maintained the “cutting at least or minimum of one and one-half inches” language.

Department staff also reached out to the lead author of the sea palm harvest study, Dr. Sara Ann Thompson, who agreed the proposed harvest method was appropriate (Thompson et al. 2010). The currently proposed sea palm harvest method specifies measuring one and one-half inches from the start of the grooved area on the blade to determine the location of the harvest cut.

No other alternatives were identified by or brought to the attention of Commission staff that would have the same desired regulatory effect.

(b) No Change Alternative

The no change alternative would leave the existing regulations in place:

- Sea palm harvest will continue to be allowed in a manner that is not specific to the species which may result in impacts to sea palm populations. Additionally, current harvest methods utilized by commercial sea palm harvesters will not be memorialized into regulation.
- Despite reported sea palm loss in its southern range and lack of historic harvest in the southern range, harvest will be allowed to continue without regard to concerns around its loss and lack of recovery in the southern end of its range.
- Collectors for broodstock collection may be unaware that the commercial Kelp Harvesting License is not the appropriate license for broodstock collections.
- Harvesters interested in purchasing a license will continue to be directed to contact the Department’s Seal Beach office, which no longer has staff to support license sales, instead of contacting the Department’s License and Revenue Branch by phone to purchase an initial commercial Kelp Harvesting License and will continue to not be aware that subsequent licenses may be purchased online.
- Harvesters will continue to contact the Department’s Seal Beach office for copies of informational maps and Monthly Harvest Reports instead of referring to the Department’s commercial kelp webpage as the current source for downloadable informational maps and Monthly Harvest Reports.
- Existing FGC referencing conditions in which a commercial Kelp Harvesting License may be revoked or not reissued would not be highlighted in Section 165.
- The terminology “may” will not be replaced with the more clear terminology “shall” in reference to allowable kelp harvest methods which may impact enforceability of the regulations.
- Harvester’s Monthly Reports
 - Kelp Harvester’s Monthly Report DFW 113 (REV. 01/01/23)
 - Improvement of the Department’s knowledge of giant kelp and bull kelp harvest methods and information on kelp harvest effort will not be realized.

- Electronic signatures and the acknowledgement that the electronic signature is legally binding will not be added contrary to accessibility laws including California Government Code sections 7405 and 11135, and the Web Content Accessibility Guidelines.
- Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report DFW 113A (REV. 01/01/23)
 - Improvement of the Department's management of sea palm, knowledge of sea palm populations and harvest locations, marine algae harvest methods, and information on marine algae harvest effort will not be realized.
 - Electronic signatures and the acknowledgement that the electronic signature is legally binding will not be added contrary to accessibility laws including California Government Code sections 7405 and 11135, and the Web Content Accessibility Guidelines.

(c) Description of Reasonable Alternatives That Would Lessen Adverse Impact on Small Business:

No alternatives that would lessen reporting costs and potential purchase of a GPS device impacts on small businesses were identified by or brought to the attention of Commission staff that would have the desired regulatory effect of improving the Department's management of kelp and other aquatic plants.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The Commission anticipates that the impact of the proposed regulations on the entirety of commercial kelp and other marine algae harvesting activity is not expected to be sufficient to significantly impact kelp and other marine algae harvesting businesses nor expenditures from kelp and other marine algae harvesting businesses to other businesses within the state. The Commission does not anticipate any impacts on the ability of California businesses to compete with businesses in other states because commercial harvest of wild marine algae is not allowed in nearby states of Oregon and Washington.

- (b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The Commission does not anticipate any significant impacts on the creation or elimination of jobs, the creation of new businesses, the elimination of existing businesses, or the expansion of businesses in California. Kelp harvesting and other marine algae harvesting businesses may have to adjust to changes in reporting procedures as described in the proposed regulations, but these changes are not expected to be substantial due to the opportunity for commercial kelp and other marine algae harvest being kept open, except for the proposed sea palm area closure south of Pigeon Point from which sea palm is not currently harvested.

The Commission does not anticipate impacts on the health and welfare of California residents or on worker safety.

The Commission anticipates benefits to the state's environment in the sustainable management of sea palm.

- (c) Cost Impacts on a Representative Private Person or Business

The Commission anticipates that the annual reporting costs for business from these proposed regulations will be \$29.23 per license holder, as described in the STD 399 Economic and Fiscal Impact Statement addendum. Commercial businesses which harvest sea palm may have to make a one-time purchase, if not already in possession, of a GPS unit (\$200) to comply with the central latitude and longitude reporting requirements of the proposed regulations.

- (d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State: None

- (e) Nondiscretionary Costs/Savings to Local Agencies: None

- (f) Programs Mandated on Local Agencies or School Districts: None

- (g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None

- (h) Effect on Housing Costs: None

VII. Economic Impact Assessment

- (a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

None. The cumulative effects from the proposed amendments to the regulations for commercial harvest of kelp are anticipated to maintain sufficient opportunity to not induce significant adverse direct or indirect economic impacts to businesses in the state, including to the creation or elimination of jobs. The Department has confirmed via the latest harvest data that there are no commercial harvesters who would be impacted by the proposed closure south of Pigeon Point in San Mateo County. The annual costs associated with the proposed amendments to the reporting requirements are estimated to be \$29.23 for all commercial kelp licensees, while the 12 commercial kelp licensees who reported sea palm

harvest may have to purchase a GPS unit (approximately \$200) if they do not currently have a GPS unit or software, to comply with the proposed new sea palm reporting requirements for central latitude and longitude coordinates of harvest.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The cumulative effects of the changes statewide are expected to be neutral to the creation or elimination of businesses in California. No significant changes in total harvesting effort and expenditures from commercial kelp and other marine algae harvesting to other businesses within the state are expected as a direct result of the proposed regulation changes.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The cumulative effects of the changes statewide are expected to be neutral to expansion of businesses currently doing business within the state. No significant changes in total harvesting effort and expenditures from commercial kelp and other marine algae harvesting to other businesses within the state are expected as a direct result of the proposed regulation changes.

(d) Benefits of the Regulation to the Health and Welfare of California Residents

The Commission does not anticipate impacts on the health and welfare of California residents.

(e) Benefits of the Regulation to Worker Safety

The Commission does not anticipate impacts to worker safety from the proposed regulations.

(f) Benefits of the Regulation to the State's Environment

The Commission anticipates benefits to the state's sustainable management of sea palm by specifying harvest methods for sea palm, employing a precautionary approach to remaining sea palm populations in the southern range of the species, requiring specific harvest location information to better manage sea palm populations, improving the Department's knowledge of allowable marine algae harvest methods utilized, providing further clarification of license allowances, and updating outdated references.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The current regulations in Section 165 describe general licensing provisions for the commercial harvest of kelp and other aquatic plants. Although Section 165 provides regulations for kelp and other aquatic plants overall, it also contains subsections which provide more nuanced regulations depending on the species harvested and/or use of the harvest. Subsection (e) provides regulations pertaining to species harvested for human food and classified as edible seaweed including regulations specific to bull kelp harvest for human consumption. Sea palm is not specifically listed in current regulation but is an aquatic plant classified as edible seaweed and thus subject to the harvest regulations in subsection 165(e). Current allowable harvest methods for sea palm and other edible seaweed species include cutting and picking attached individuals and taking drift or loose individuals. All harvested individuals must be processed. There are no limits on the number of commercial Kelp Harvesting Licenses sold, and no harvest limits or seasonal closures for sea palm. The current regulations in Section 705.1 list the permit fee and incorporate by reference the 2023 Kelp Harvesting License and Drying Application (DFW 658), the Commercial Kelp Harvester's Monthly Report (DFW 113), Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report (DFW 113A) and Release of Property (DFW 1108) forms.

Sea palm is an annual kelp species that lives in the upper-mid intertidal zone and is exposed to heavy wave action. The individual's blades are located at the top of the individual and contain the reproductive material. Spores are released during low tide resulting in a limited dispersal of one to five meters. The alga is commercially targeted for harvest for use as human food. Sea palm can be susceptible to overharvest due to its morphology, limited spore dispersal, annual life cycle, and existing allowable harvest methods for commercial take. However, research suggests specific harvest methods may allow for blade regrowth and may help mitigate potential overharvest concerns.

Additionally, there is concern for the species based on long-term fishery-independent data that is collected by the Multi-Agency Rocky Intertidal Network (MARINe). MARINe monitoring data depicts a drop in sea palm density after 2014 at their annually monitored sites, with the most loss in its southern range, which coincides with the Northeast Pacific Marine Heatwave (MHW) that began in mid-2014. Additionally, MARINe monitoring shows slow recovery at most sites, especially in its southern range and a lack of recovery at some sites. Researchers have determined that sea palm loss is primarily due to the Northeast Pacific MHW, similar to the declines that have been documented in bull kelp along the north coast. Additionally, researchers at MARINe suspect sea palms slow recovery at some sites may be partially due to an abundance of California mussels (*Mytilus californianus*) that outcompete for space.

Based on MARINe long-term monitoring, sea palm researcher discussions, stakeholder conversations, and a lack of defined sea palm harvest methods in current regulations, the California Department of Fish and Wildlife (Department) is recommending that the California Fish and Game Commission (Commission) adopt management changes to the commercial harvest of sea palm which are necessary to improve current and future management of this marine alga. The Department has determined that specific harvest methods for sea palm are

warranted as the annual species' reproductive material are contained in the blades at the top of the individual and due to its limited dispersal. Furthermore, a precautionary approach is warranted to protect and maintain the remaining sea palm due to sea palm's reported southern range contraction to southern Big Sur in Monterey County during the 2014-2016 MHW. Finally, the proposed regulations will provide benefits to the sustainable management of marine algae resources and will provide regulatory clarity and enforceability.

Proposed Amendments

The proposed sea palm regulation amendments define specific harvest methods for sea palm that allow for consistency of methods across all harvesters and potentially allows for the sea palm blades to regrow and reproduce. The proposed amendment defines a partial blade cut approach above the meristem as determined by locating the grooved area on the blade and cutting the blade at least one- and one-half inches away towards the terminal tip of the blade. This proposed harvest method memorializes the blade cut approach harvest methods conducted by the commercial sea palm harvesters and has received sea palm harvester consensus support. Additionally, the Department recommends that the Commission prohibit the take of drift and beached sea palm to establish regulatory clarity and assist the Department's Law Enforcement Division (LED) with enforceability of the regulations. Finally, the Department is recommending that the Commission restrict the incidental take of marine invertebrate species as requested by LED. The restriction will prohibit take or possession of marine invertebrate species one inch or greater in width while harvesting sea palm and require that sea palm be inspected for marine invertebrate species less than one inch in width prior to transport. The Department further recommends that unless take is otherwise prohibited, marine invertebrate species less than one inch in width may be incidentally taken if every effort is made to return them near their habitat of origin upon harvest.

The Department recommends prohibiting sea palm harvest in the southern portion of its range from Pigeon Point in San Mateo County southward to the United States-Mexico border due to concerns around the loss and lack of recovery of sea palm. The 37° 11' north latitude line at Pigeon Point in San Mateo County is recommended by LED as the northern boundary for closure to aid in enforcement of the regulations and the Department has confirmed, based on the most recent harvest data, that there are no commercial harvesters who would be impacted by the closure.

The Department also recommends updates to subsection 705.1(a) which will allow for the removal of the Kelp Harvesting License and Drying Application form (incorporated by reference) from Title 14 and negate the need for annual regulation updates to the form. Instead of incorporating the form by reference, the Department recommends that the form fields of a form to be issued by the Department be listed in proposed subsections 705.1(a)(1)(A) through (X). Most fields will remain unchanged, however, minor edits are proposed to some fields and form instructions: Existing language on the form stating, "It is mandatory to complete all items unless otherwise specified" is proposed to be amended by changing "unless specified as voluntary" to "unless otherwise specified"; language specifying "(Not required for individuals)" is proposed to be added to the *Business Name* field; changes are proposed to correct terminology from "application for a permit" to "application for a license" in the *Harvester License #* field; language specifying "(if applicable)" is proposed to be added to the *Name*,

Place, and Date of Incorporation field on the current DFW 658; language specifying “(except kayak)” is proposed to be added to the *California vessel registration number* field; language specifying the “Seal Beach office” is proposed to be repealed from the verification section; and language in the signature section is proposed to clarify text about suspended or revoked licenses and reasons therefor, to add citations to Fish and Game Code (FGC) sections 1054 and 6656, and to make non-substantive changes.

To improve the Departments’ knowledge of giant kelp and bull kelp harvest methods and provide information on kelp harvest effort, the Commercial Kelp Harvester’s Monthly Report DFW 113 (REV. 01/01/23) is proposed to undergo a complete strike and replace with DFW 113 (REV. 04/17/25). The proposed amendments to the form include new fields to specify whether harvest was drift or beached, and the number of individuals harvesting and the estimated harvest time in minutes for the business each day of harvest of giant kelp or bull kelp. The proposed amendments define drift and beached and add an electronic signature ability and an acknowledgment that the electronic signature is legally binding.

To improve the Department’s management of sea palm, knowledge of sea palm harvest locations, marine algae harvest methods, and provide information on marine algae harvest effort, the Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester’s Monthly Report DFW 113A (REV. 01/01/23) is proposed to undergo a complete strike and replace with DFW 113A (REV. 04/17/25). The proposed amendments to the form include new fields to specify the day of harvest for all harvested algae, the central latitude/longitude coordinates of sea palm harvest, whether harvest was drift or beached, and the number of individuals harvesting and the estimated harvest time in minutes for the business each day of harvest of each species. The proposed amendments define drift and beached, clarify that harvest reporting information should be recorded for one species per row, and add an electronic signature ability and an acknowledgment that the electronic signature is legally binding.

The Department also recommends amending subsection 705.1(a)(2) to update the kelp harvesting license fee for 2025, pursuant to Section 713, FGC.

Finally, the Department recommends clarifying regulatory language by referring individuals interested in marine algae collections for broodstock purposes to the appropriate regulations, updating outdated contact information to purchase a commercial Kelp Harvesting License and to receive copies of informational maps depicting administrative kelp beds and fishing blocks and monthly harvest reports, providing reference to existing FGC section describing conditions in which a license can be revoked or not reissued, a non-substantive clarification of kelp harvest language, and other non-substantive changes for clarity and consistency.

Benefits of the Regulations

Under the Marine Life Management Act (MLMA), it is the policy of the state to ensure the conservation, sustainable use, and restoration of California’s living marine resources for the benefit of all citizens of the state (FGC, Section 7050). Sea palm and other marine algae, considered a fishery under FGC Section 94, are subject to the policy of the state that mandates programs for the conservation and management of the marine fishery resources of California shall be established and administered to prevent overfishing, to rebuild depressed stocks, to ensure conservation, to facilitate long-term protection, and, where feasible, to

restore marine fishery habitats, and to achieve the sustainable use of the state's fishery resources [subdivision 7055(b) of the FGC] and that fisheries are conducted sustainably so that long-term health of the resources is not sacrificed in favor of short-term benefits [subdivision 7056(a) of the FGC].

The proposed regulatory changes will benefit the sustainable management of the fishery by specifying harvest methods for sea palm, employing a precautionary approach to remaining sea palm populations in the southern range of the species, requiring specific harvest location to better manage sea palm populations, improve the Department's knowledge of allowable marine algae harvest methods utilized, provide further clarification of license allowances, and update outdated references.

Consistency and Compatibility with Existing Regulations

The proposed regulatory changes are neither inconsistent nor incompatible with existing state regulations. Section 20, Article IV, of the state Constitution specifies that the Legislature may delegate to the Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to adopt regulations governing the harvest of kelp and other aquatic plants for profit (FGC Section 6653). No other state agency has the authority to adopt regulations governing the harvest of kelp and other aquatic plants for profit. The Commission has reviewed its own regulations and finds that the proposed regulatory changes are neither inconsistent nor incompatible with existing state regulations. The Commission has searched the CCR and has found no other state agency regulations pertaining to the commercial harvest of kelp and other aquatic plants; therefore, the Commission has concluded that the proposed regulatory changes are neither inconsistent nor incompatible with existing state regulations.

Proposed Regulatory Language

Section 165, Title 14, CCR, is amended to read:

§ 165. Commercial Harvesting of Kelp and Other Aquatic Plants.

(a) General License Provisions. Pursuant to the provisions of Section 6651 of the Fish and Game Code, no kelp or other aquatic plants may be harvested for commercial purposes except under a revocable license issued by the department pursuant to this section or a marine aquaria collector's permit issued pursuant to Section 8597 of the Fish and Game Code. Collectors of kelp and other aquatic plants for broodstock purposes for aquaculture must refer to Section 243 of these regulations.

(1) Any person harvesting kelp or other aquatic plants for commercial purposes shall first obtain a valid license for that purpose and shall have that license on their person or in their immediate possession when engaged in carrying out any activity authorized by the license.

(A) Kelp harvesting licenses are valid from January 1 to December 31, inclusive, or if issued after the beginning of that term, for the remainder thereof.

(B) Drying Permits for agar-bearing marine plants. Pursuant to Section 6653.5 of the Fish and Game Code, no person shall reduce the moisture content or otherwise dry agar-bearing marine plants harvested from waters of the state except under the authority of a Drying Permit issued by the department. To obtain a Drying Permit, the applicant must choose the Drying Permit option on the Kelp Harvesting License and Drying Application (DFW 658) incorporated by reference in Section 705.4 provided by the department.

~~(C) License applications, informational maps depicting administrative kelp beds (defined in Section 165.5) and maps of fishing blocks (specified in subsection 190(f)) for edible seaweed and agar-bearing marine algae, and Monthly Harvest Reports~~ Initial license applications are available on request by contacting the department's Seal Beach office by phone at (562) 342-7100. License and Revenue Branch at (916) 928-5822 or by email LRBCOMM@wildlife.ca.gov. Subsequent licenses are available for purchase online <https://www.ca.wildlifelicense.com/internetsales/>.

~~(D) Informational maps depicting administrative kelp beds (defined in Section 165.5) and maps of fishing blocks (specified in subsection 190(f)) for edible seaweed and agar-bearing marine algae, and Monthly Harvest Reports~~ are available on the department's webpage <https://wildlife.ca.gov/Conservation/Marine/Kelp/CommercialHarvest>.

(2) Cost of License. See Section 6651 of the Fish and Game Code.

(3) Where to Submit Applications. The applicant for a Kelp Harvesting and Drying Permit shall submit the completed application, as specified in Section 705.1, together with the fee authorized by Section 6651 of the Fish and Game Code, to the address

listed on the application. Pursuant to Section 700.5, license applications and authorized fees may also be submitted electronically using the Automated License and Data System through the department's Online License Sales and Services website by applicants who have a GO ID number and previously acquired a Kelp Harvesting and Drying Permit. ~~upon the department's establishment of an online submission system.~~

~~(4) License Limitation. All provisions of sections 6650–6680 of the Fish and Game Code, and sections 165 and 165.5 of these regulations shall become a condition of all licenses issued under this section to be fully performed by the holders thereof, their agents, servants, employees or those acting under their direction or control.~~

(A) All provisions of sections 6650 through 6680 of the Fish and Game Code, and sections 165 and 165.5 of these regulations shall become a condition of all licenses issued under this section to be fully performed by the holders thereof, their agents, servants, employees or those acting under their direction or control.

(B) Pursuant to Section 6656 of the Fish and Game Code, a kelp harvesting license may be revoked and reissuance may be prohibited for a period of not more than one year if the licensee harvested kelp from a closed bed and/or if the licensee violated any laws or regulations related to kelp.

[. . . No changes to subsections (b) through (b)(9). . .]

(c) Harvesting of giant and bull kelp. In this subsection, kelp means both giant and bull kelp.

(1) A kelp harvester may harvest kelp by cutting and removing portions of attached kelp or by collecting unattached kelp.

(2) A kelp harvester ~~may~~ shall not cut attached kelp at a depth greater than four feet below the surface of the water at the time of cutting.

(3) No kelp received aboard a harvesting vessel shall be allowed to escape from the vessel or be deposited into the waters of this state.

(4) In beds north of Point Montara, San Mateo County, bull kelp may only be taken by hand harvesting. Hand harvesting includes using manually operated hand-held tools. No mechanical harvesters of any kind shall be allowed.

(5) Between April 1 and July 31, a kelp harvester may not harvest bull kelp from a nonleased kelp bed that lies partially or totally within the boundary of the Monterey Bay National Marine Sanctuary extending from Santa Rosa Creek, San Luis Obispo County, northward to Rocky Point, Marin County. This subsection does not preclude the removal of bull kelp from beaches within the Monterey Bay National Marine Sanctuary during the seasonal closure.

(6) Monthly Harvest Reports for uses other than human food. Monthly Harvest Reports shall be made in duplicate using Commercial Kelp Harvester's Monthly Report form DFW 113 incorporated by reference in Section 705.1.

(A) In addition to the license fee, a kelp harvester shall pay a royalty fee of \$1.71 for each ton (2,000 lbs) of wet kelp harvested from a nonleased administrative kelp bed.

(B) Maintenance and submission requirements for Commercial Kelp Harvester's Monthly Harvest Reports and submission requirements for royalty fees are specified in subsection (b)(3).

(7) Mechanical Harvest of Kelp. Prior commission approval of a kelp harvest plan is necessary before a kelp harvester may use a mechanical harvester to harvest giant kelp.

(8) Kelp Harvest Plans. All kelp harvest plans shall include the following:

(A) The number of the designated bed or beds as shown in subsection 165.5(k), a description of the kelp bed or portion of the kelp bed requested, and the designated number of square miles in each bed or portion thereof;

(B) The intended use of kelp;

(C) If a mechanical harvester will be used, the kelp harvest plan must identify how the mechanical harvester will be used while avoiding:

1. repetitive harvest of individual giant kelp plants;

2. harvest of bull kelp from those portions of kelp beds that contain both giant kelp and bull kelp; and

3. harvest of giant kelp near sea otter rafting sites used by female sea otters with dependent pups.

(D) The amount of kelp proposed to harvest on a monthly and annual basis during the next five years.

(E) The estimated frequency of harvesting activities for each kelp bed.

(F) The number of harvest boats, maximum kelp holding capacity in wet tons for each boat, including the operating vessel gross tonnage and fuel tank capacity.

(G) Harvesting methodology (harvest operation description).

(H) All locations (addresses) where kelp landing and weighing will take place.

(I) The specific details of wet kelp weighing equipment and methods to be used at the landing sites for accurate reporting.

(J) The name, address, phone number, and license number of kelp processor and method of transporting the kelp to the processing location.

(K) Kelp harvest plans must be updated and submitted to the commission for approval every five years.

(9) Temporary harvest restrictions and weekly reporting for bull kelp. Subsections (c)(9) through (c)(9)(C)3. shall remain in effect only until January 1, 2026, and as of that date are repealed.

(A) Notwithstanding subsection (b)(8), bull kelp may not be taken for any purpose in Sonoma and Mendocino counties.

(B) Bull kelp may be harvested in Humboldt and Del Norte counties for human consumption only, not to exceed an annual overall fishery quota of 4 tons (8,000 lbs) wet weight for the combined counties between January 1 and December 31.

1. The department may announce a temporary commercial bull kelp harvest closure in order to obtain an accurate tally of harvest. If the annual overall fishery quota has not been met, the fishery will reopen and commercial kelp harvester license holders shall be limited to allotted harvest amounts to preclude exceeding the annual overall fishery quota and the annual license quota specified in subsection 165(e)(2)(A).

a. Allotted harvest amounts will be calculated as the difference between the annual overall fishery quota and bull kelp harvest from Humboldt and Del Norte counties reported in the monthly harvest reports required pursuant to subsection 165(b)(3) and the weekly harvest reports required pursuant to subsection 165(c)(9)(C), divided by the number of licensed harvesters who indicated "Bull Kelp (Human Consumption)" on their Kelp Harvesting License and Drying Application ~~DFW 658~~ and those who have not indicated "Bull Kelp (Human Consumption)" on their Kelp Harvesting License and Drying Application ~~DFW 658~~ but have reported take of bull kelp in Del Norte and/or Humboldt counties on their Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Reports DFW 113A in one or more months during the current annual fishery quota period.

b. Licensed harvesters who indicated "Bull Kelp (Human Consumption)" on their Kelp Harvesting License and Drying Application ~~DFW 658~~ and licensed harvesters who did not indicate "Bull Kelp (Human Consumption)" on their Kelp Harvesting License and Drying Application ~~DFW 658~~ but have reported take of bull kelp in Del Norte and/or Humboldt counties on their Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Reports DFW 113A in one or more months during the current annual fishery quota period shall be allotted the amount calculated in subsection 165(c)(9)(B)1.a. If the allotment exceeds the amount remaining in a licensed harvester's annual license quota specified in subsection 165(e)(2)(A), the licensed harvester's allotment shall be decreased to the amount remaining in the licensed harvester's annual license quota and the amount of the allotment in excess of the licensed harvester's annual license quota shall be divided equally between the remaining licensed harvester(s) who have not exceeded their annual license quota specified in subsection

165(e)(2)(A). Prior to reopening the fishery, the department shall notify licensed harvesters via email of their allotted amount.

2. The department shall inform the public by posting a notice on its webpage ~~<https://wildlife.ca.gov/Conservation/Marine/Kelp/Commerical-Harvest>~~ <https://wildlife.ca.gov/Conservation/Marine/Kelp/Commercial-Harvest> and shall notify commercial kelp harvester license holders by email prior to any implementation of a temporary closure pursuant to subsection 165(c)(9)(B)1., allotments pursuant to subsections 165(c)(9)(B)1. through 165(c)(9)(B)1.b., or an annual closure triggered by the annual overall fishery quota. (Note: A department status report on progress toward the annual overall fishery quota is updated weekly and available at ~~<https://wildlife.ca.gov/Conservation/Marine/Kelp/Commerical-Harvest>~~ <https://wildlife.ca.gov/Conservation/Marine/Kelp/Commercial-Harvest>.)

3. It is the responsibility of the harvester to keep themselves informed of the remaining quota by monitoring the reported harvest on the department's webpage: ~~<https://wildlife.ca.gov/Conservation/Marine/Kelp/Commerical-Harvest>~~ <https://wildlife.ca.gov/Conservation/Marine/Kelp/Commercial-Harvest>. Any announcement issued shall constitute official notice.

4. All harvest in excess of the annual overall fishery quota or allotments shall be forfeited to the department by signing a Release of Property DFW 1108 incorporated by reference in Section 705.1. The excess harvest shall be used, sold, disposed of, or donated to a non-profit institution. If sold, the proceeds of all such sales shall be paid into the Fish and Game Preservation Fund.

(C) Mandatory Harvest Data Reporting Requirements for bull kelp.

1. In addition to monthly reporting, persons harvesting bull kelp in Humboldt and Del Norte counties must submit weekly reports by email to kelp@wildlife.ca.gov.

2. Weekly harvest reports shall be submitted by 5:00 p.m. on each Monday for the Sunday through Saturday of the preceding week. Weekly harvest reporting is required for the duration of the annual license unless the harvester provides a notice via email to kelp@wildlife.ca.gov that bull kelp will not be harvested within a specified time frame or no longer occur for the remainder of the license year.

3. Harvest reporting shall be provided in the email body and shall include business name, business contact name, harvester license number, amount of harvest in pounds by county in which harvest occurred, and time period of harvest which includes the month, specific calendar days of harvest, and year.

[. . . No changes to subsections (d) through (d)(4). . .]

(e) Harvesting of marine plants, including the genera *Porphyra*, *Laminaria*, *Monostrema*, and other aquatic plants utilized fresh or preserved as human food and classified as edible seaweed.

(1) General Provisions.

(A) Edible varieties of marine plants, except sea palm (*Postelsia palmaeformis*), must be harvested by cutting or picking, except that drift or loose plants may be picked up by the harvester. Sea palm may only be harvested by cutting as specified in subsection (e)(3)(A). All harvested plants must be processed.

(B) Edible seaweed may be harvested from state waters throughout the year, except as provided under Section 164.

(C) While harvesting edible seaweed, it is unlawful to take or possess abalone.

(D) A harvester may use conventional underwater diving gear or SCUBA while harvesting edible seaweed.

(E) Harvesters of giant and bull kelp shall adhere to regulations specified in subsections (c)(1) and (c)(4) through (c)(5). Harvesters of giant kelp shall adhere to the regulations specified in subsection (c)(2).

(2) Harvest of Bull Kelp for Human Consumption.

(A) Unless otherwise prohibited, in addition to open or leasable beds, bull kelp may be harvested for human consumption in a closed or lease-only administrative kelp beds described in subsection 165.5(k) if the beds are not leased. Persons operating under the authority of an edible seaweed harvesters license may take, not to exceed, 2 tons (4,000 lbs) of bull kelp annually per license. The entire plant may be harvested.

(B) Temporary bull kelp harvest restrictions and harvest reporting are specified in subsections (c)(9) through (c)(9)(C)3.

(3) Harvest of Sea Palm for Human Consumption

(A) Sea palm cannot be cut or harvested anywhere on the plant except as described in these regulations. Allowable harvest cut location shall be determined by locating the grooved area on the blade and cutting the blade at least 1.5 inches away towards the terminal tip of the blade. Harvesters may not take detached, drift, or beached individuals. Drift is defined as detached individuals floating in the water, beached is defined as detached individuals on the beach or rocks.

(B) No marine invertebrate species 1 inch or greater in width shall be taken or possessed while harvesting sea palm as authorized in this section. Sea palm must be inspected for marine invertebrate species less than 1 inch in width prior to transport. Unless take is otherwise prohibited, marine invertebrate species less than 1 inch in width may be incidentally taken if every effort is made to return them near their habitat of origin upon harvest.

(C) No sea palm may be cut, disturbed, or possessed from the 37° 11' north latitude line at Pigeon Point in San Mateo County southward to the United States-Mexico border.

~~(3)~~(4) Weighing of Edible Marine Plants. All edible marine plants shall be weighed pursuant to the provisions of subsection (b)(3)(D).

~~(4)~~(5) Monthly Harvest Reports shall be made in duplicate using Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report DFW 113A incorporated by reference in Section 705.1.

~~(5)~~(6) In addition to the license fee, an edible seaweed harvester shall pay a royalty fee of \$24 per ton (2,000 lbs) of wet edible seaweed harvested.

~~(6)~~(7) Maintenance and submission requirements for Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report and submission requirements for royalty fees are specified in subsection (b)(3).

[. . . No changes to subsections (f) through (g). . .]

NOTE: Authority cited: Sections 6653 and 6653.5, Fish and Game Code.
Reference: Sections 51, 6650, 6651, 6652, 6653, 6653.5, 6654, 6656 and 6680, Fish and Game Code.

Proposed Regulatory Language

Section 705.1, Title 14, CCR is amended to read:

§ 705.1. Commercial Kelp Harvesting and Drying Application, Monthly Harvest Reports.

(a) Application

(1) ~~2023 Kelp Harvesting License and Drying Application. Applications, designated on a form issued by the department containing the information in subsections(a)(1)(A) through (a)(1)(X), are available from the department's License and Revenue Branch, DFW 658 (REV. 01/01/23), incorporated by reference herein. It is mandatory to complete all items unless otherwise specified.~~

(A) First name, middle initial and last name

(B) Automated License Data System Get Outdoors Identification number (Go ID#)

(C) Business Name (not required for individuals)

(D) Name, place and date of incorporation

(E) Harvester License number (required unless first application for a license)

(F) Mailing address, city, state, and zip code

(G) Street address, city, county, state, and zip code

(H) Email address

(I) Daytime telephone number

(J) Business telephone number

(K) Gender: male, female, or nonbinary

(L) Date of birth

(M) Hair color

(N) Eye color

(O) Height

(P) Weight

(Q) Boat name, if boat used. If kayak used, write "kayak."

(R) California vessel registration number (except kayaks).

(S) Number of processing plants

(T) Method of harvesting: hand or mechanical

(U) Type(s) of aquatic plant(s) to be harvested: agar, edible seaweed, bull kelp, bull kelp for human consumption, giant kelp

(V) Drying permit: (Select this option if you choose to dry harvest pursuant to California Code of Regulations (CCR), Title 14, subsection 165(a)(1)(B).)

(W) Verification: I understand that I must obtain a valid license from the department once per year before I begin harvesting kelp or other aquatic plants.

(X) Signature and signature date: In the event a license is granted, I hereby agree to abide by all conditions of said license and all laws and regulations of the California Fish and Game Code (FGC) and the CCR, including FGC sections 6650 through 6711 and CCR, Title 14, Sections 165, 165.5, and 705.1. I am eligible for the indicated license and do not possess a license that is suspended or revoked, nor is there a case pending that would restrict me from obtaining a license. I hereby certify that all information contained on this application and/or submitted to meet the requirements for issuance of subject license is true and correct. I understand that, in the event this information is found to be untrue or incorrect, the license issued will be considered invalid and must be surrendered to the California Department of Fish and Wildlife and that I will be subject to criminal prosecution pursuant to FGC Section 1054. I understand that, pursuant to FGC Section 6656, this license or permit may be suspended or revoked by the California Fish and Game Commission for violations of any law or regulation relating to kelp.

(2) Permit-License Fees. ~~\$174.75~~ \$187.75 (does not include the fees specified in subsection 700.4(e)).

(b) Monthly Harvest Reports

(1) Commercial Kelp Harvester's Monthly Report DFW 113 (~~REV. 01/01/23~~), (REV. 04/17/25) incorporated by reference herein.

(2) Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report DFW 113A (~~REV. 01/01/23~~), (REV. 04/17/25) incorporated by reference herein.

(c) Release of Property

(1) Release of Property DFW 1108 (NEW 07/01/22), incorporated by reference herein.

NOTE: Authority cited: Sections 1050, 6651, 6653 and 6653.5, Fish and Game Code. Reference: Sections 713, 1050, 6650, 6651, 6652, 6653 and 6653.5, Fish and Game Code.



State of California – Department of Fish and Wildlife
COMMERCIAL KELP HARVESTER'S MONTHLY REPORT
 DFW 113 (REV. 04/04/23)(REV. 04/17/25) Page 1 of 2

Business Name _____ Business Contact Name _____

Harvester's License Number _____ Report Period: Month _____ Year _____

Number of individuals harvesting for the business during this report ____ ☐ Check if no harvest occurred Number of report pages submitted: _____

Date	Bed # ¹	MPA ²	Giant or bull kelp	Latitude/longitude for bull kelp harvest only ³	<u>Drift or Beached</u> ⁴	<u>Number of Individuals Harvesting</u>	<u>Estimated Harvest Time (minutes)</u>	<u>Tons harvested⁴ harvested⁵</u>

OPEN or LEASABLE BEDS	Total tons harvested	
	Rate per ton	\$1.71
	Total amount due	\$
Bed #:		
LEASED BED (use additional reports as needed)	Total tons harvested	
	Rate per ton ⁵ <u>ton</u> ⁶	\$
	Total amount due	\$
	Balance of advanced deposit ⁶ <u>deposit</u> ⁷	\$
	Net amount due	\$
Bed #:		
TOTAL DUE (ALL BEDS)		

Certificate: I hereby certify that I have reviewed this report and the information shown herein is true and correct to the best of my knowledge pursuant to the provisions of Fish and Game Code sections ~~6650-6711~~ 6650 through 6711 and sections 165, 165.5, and 705.1 of Title 14 of the California Code of Regulations. In accordance with California Civil Code subdivision 1633.5(b), I acknowledge that by providing my electronic signature for this form, I agree that my electronic signature is a legally binding equivalent to a handwritten signature. I hereby confirm that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

Signature _____ Title _____ Date _____

**COMMERCIAL KELP HARVESTER'S MONTHLY REPORT**

Regulations governing this report are found in Fish and Game Code section 6650 et seq. and California Code of Regulations, Title 14, sections ~~165-165.5-165, 165.5,~~ and 705.1. This report is made in accordance with provisions established in Chapter 6, Articles ~~1-3,~~ 1 through 3, sections ~~6650-6711,~~ 6650 through 6711, Fish and Game Code, and California Code of Regulations, Title 14, sections ~~165-165.5-165, 165.5,~~ and 705.1. The purpose of this form is to report the number of tons of wet kelp harvested during the month.

General Instructions:

- A) Report must be completed each month regardless of whether harvest occurred (indicate no harvest). Include additional harvest reports as needed and specify the number of pages submitted.
- B) Make checks payable to California Dept. of Fish and Wildlife.
- C) Prepare report in duplicate. Retain one copy for your files. Submit the original to California Department of Fish and Wildlife, Accounting Services Branch/Cash Receipts at 715 P Street, 16th Floor, Sacramento, CA 95814 or by postal delivery to P.O. Box 944209, Sacramento, CA 94244-2090.
- D) Questions regarding this report may be addressed to: kelp@wildlife.ca.gov.

Log Instructions:

- 1. Administrative kelp bed number. Indicate leased bed by prefixing bed number with "L."
- 2. If harvest is within a marine protected area (MPA) that allows take, specify the MPA name.
- 3. Central latitude/longitude coordinates of bull kelp harvest. If multiple locations of harvest are visited, provide the central coordinates for each location. Latitude/longitude coordinates should use the Decimal Degrees format with 5 decimal places. Use World Geodetic System of 1984 (WGS84) coordinate system/datum.
- 4. Specify if harvest is from the drift (detached in the water) or beached (detached on the beach/rocks).
- ~~4-5.~~ Short ton = 2,000 pounds.
- ~~5-6.~~ Leased bed, enter the contract rate per ton.
- ~~6-7.~~ Leased bed, enter the balance of advanced deposit. If balance of advanced deposit is less than "Total amount due" show the difference in "Net amount due" column.

Harvester's License Number _____ Report Period: Month _____ Year _____

<u>Date</u>	Fishing block	Nearest prominent landmark	Latitude/longitude for <u>bull kelp and sea palm harvest only¹</u>	Species – common or scientific name ²	<u>Drift or Beached</u> ³	<u>Number of Individuals Harvesting</u>	<u>Estimated Harvest Time (minutes)</u>	Total lbs. or tons agarweed or edible seaweed harvested	Rate per lb. or ton agarweed² agarweed⁴ or edible seaweed³s eaweed⁵	Net amount due
								Total due		

Signature _____ Title _____ Date _____



State of California – Department of Fish and Wildlife

**COMMERCIAL EDIBLE SEAWEED/AGARWEED AQUATIC
PLANT HARVESTER'S MONTHLY REPORT**

DFW113A (REV. 01/01/23) DFW 113A (REV. 04/17/25) Page 2 of 2

Regulations governing this report are found in Fish and Game Code section 6650 et seq. and California Code of Regulations, Title 14, sections ~~165-165.5~~, ~~165.5~~, and 705.1. This report is made in accordance with provisions established in Chapter 6, Articles ~~1-3~~, 1 through 3, sections ~~6650-6711~~, 6650 through 6711, Fish and Game Code and California Code of Regulations, sections ~~165-165.5~~, 165, 165.5, and 705.1. The purpose of this report is to report the weight of wet edible seaweed/agarweed aquatic plants harvested during the month.

General Instructions:

- A) Report must be completed each month regardless of whether harvest occurred (indicate no harvest). Include additional harvest reports as needed and specify the number of pages submitted.
- B) Make checks payable to California Dept. of Fish and Wildlife.
- C) Prepare report in duplicate. Retain one copy for your files. Submit the original to California Department of Fish and Wildlife, Accounting Services Branch/Cash Receipts at 715 P Street, 16th Floor, Sacramento, CA 95814 or by postal delivery to P.O. Box 944209, Sacramento, CA 94244-2090.
- D) Questions regarding this report may be addressed to: kelp@wildlife.ca.gov.

Log Instructions:

¹ Central latitude/longitude coordinates of bull kelp and sea palm harvest. If multiple locations of harvest are visited, provide the central coordinates for each location. Latitude/longitude coordinates should use the Decimal Degrees format with 5 decimal places. Use World Geodetic System of 1984 (WGS84) coordinate system/datum.

² List one species per row.

³ Specify if harvest is from the drift (detached in the water) or beached (detached on the beach/rocks).

² ~~\$17.00~~ ⁴ \$17.00 per wet ton (2,000 lbs.) or \$0.0085 per lb. of **agarweed/agar-bearing** marine plants.

³ ~~\$24.00~~ ⁵ \$24.00 per wet ton (2,000 lbs.) or \$0.012 per lb. of **edible seaweed**.

Form DFW 658 Proposed to be Repealed

SAVE

PRINT

CLEAR



State of California – Department of Fish and Wildlife

2023 KELP HARVESTING LICENSE AND DRYING APPLICATION

DFW 658 (REV. 01/01/23) Page 1 of 2

FEE: \$179.99 (Valid January 1, 2023, through December 31, 2023)**SEE INSTRUCTIONS ON REVERSE. PRINT CLEARLY.**

FIRST NAME	M.I.	LAST NAME		GO ID#	
BUSINESS NAME		HARVESTER LICENSE # (Required unless first permit)		GENDER <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE <input type="checkbox"/> NONBINARY	DATE OF BIRTH
MAILING ADDRESS			HAIR COLOR	EYE COLOR	HEIGHT WEIGHT
CITY	STATE	ZIP CODE	DAY TELEPHONE		BUSINESS TELEPHONE
STREET ADDRESS			COUNTY		
CITY	STATE	ZIP CODE	EMAIL ADDRESS		
BOAT NAME (Complete if boat used. If kayak, write "kayak")		CA VESSEL REGISTRATION NUMBER		NUMBER OF PROCESSING PLANTS	
METHOD OF HARVESTING <input type="checkbox"/> HAND <input type="checkbox"/> MECHANICAL	CHECK THE BOX FOR EACH TYPE OF AQUATIC PLANT TO BE HARVESTED <input type="checkbox"/> AGAR <input type="checkbox"/> EDIBLE SEAWEED <input type="checkbox"/> BULL KELP <input type="checkbox"/> BULL KELP (HUMAN CONSUMPTION) <input type="checkbox"/> GIANT KELP				
<input type="checkbox"/> DRYING PERMIT (Select this option if you choose to dry harvest pursuant to California Code of Regulations (CCR), Title 14, Section 165(a)(1)(B).)					
NAME, PLACE, AND DATE OF INCORPORATION					
<input type="checkbox"/> (Required) I understand that I must obtain a valid license from the Department's Seal Beach office once per year before I begin harvesting kelp or other aquatic plants.					
In the event a license is granted, I hereby agree to abide by all conditions of said license and all laws and regulations of the Fish and Game Code (FGC) and the CCR, including FGC Sections 6650 – 6711 and CCR, Title 14, Sections 165, 165.5, and 705.1. I am eligible for the indicated license, and I am not under revocation or suspension, nor is there a case pending that would restrict me from obtaining a license. I hereby certify that all information contained on this application and/or submitted to meet the requirements for issuance of subject license is true and correct. I understand that, in the event that this information is found to be untrue or incorrect, the license issued will be considered invalid and must be surrendered to the California Department of Fish and Wildlife and that I will be subject to criminal prosecution. I understand this license or permit may be suspended or revoked by the California Fish and Game Commission if I am convicted of, or plead guilty or nolo contendere to, a Fish and Wildlife violation.					
SIGNATURE X				DATE	
FOR DEPARTMENT OF FISH AND WILDLIFE USE ONLY					
ISSUED BY SEAL BEACH/DATE		TRANSACTION #			

IF NEW, YOU MUST INCLUDE VALID IDENTIFICATION WITH THIS APPLICATION



State of California – Department of Fish and Wildlife

2023 KELP HARVESTING LICENSE AND DRYING APPLICATION

DFW 658 (REV. 01/01/23) Page 2 of 2

FEE: \$179.99 (Valid January 1, 2023, through December 31, 2023)

INSTRUCTIONS FOR COMPLETING THE KELP HARVESTING LICENSE AND DRYING APPLICATION

Contact the California Department of Fish and Wildlife (CDFW) Seal Beach office by phone (562) 342-7100, if you need additional information regarding the kelp harvesting license and drying application.

INSTRUCTIONS

1. It is mandatory to complete all items unless specified as voluntary.
2. Sign and date the application.
3. Mail the application with a cashier's check, money order, personal check, or credit card authorization form with the appropriate fee to the **California Department of Fish and Wildlife, 3030 Old Ranch Parkway, Suite 400, Seal Beach, CA, 90740.**

IDENTIFICATION REQUIREMENT

California Code of Regulations (CCR), Title 14, Section 700.4(c), states any applicant applying for any license, tag, permit, reservation or other entitlement issued via the Automated License Data System (ALDS) shall provide valid identification. Acceptable forms of identification include:

- Any license document or Get Outdoors identification number (GO ID) previously issued via ALDS
- A valid driver's license or identification card issued to him or her by the Department of Motor Vehicles or by the entity issuing driver's licenses from the licensee's state of domicile
- US Military Identification Cards (Active or reserve duty, dependent, retired member, discharged from service, medical/religious personnel)
- US Certificate or Report of Birth Abroad
- US Birth Certificate
- Tribal Identification Card, as defined by each sovereign tribal nation
- US Passport
- A foreign government-issue photo identification
- Certificate of Naturalization or Citizenship
- Birth Certificate or passport issued from a US Territory

Any applicant less than 18 years of age applying for any license, tag, permit, reservation or other entitlement issued via the ALDS shall provide valid identification. Acceptable forms of identification include any form of identification described above; or a parent or legal guardian's identification as described above.

At all times when engaged in any activity for which a commercial fishing license is required, the licensee shall have in his or her possession, or immediately available to the licensee, a valid driver's license or identification card issued to him or her by the Department of Motor Vehicles or by the entity issuing driver's licenses from the licensee's state of domicile. A current passport may be used in lieu of a valid driver's license or identification card by a holder of a valid nonresident commercial fishing license issued pursuant to Fish and Game Code (FGC), Section 7852(b). The licensee's driver's license, identification card or, if applicable, passport, shall be exhibited upon demand to any person authorized by CDFW to enforce this code or regulations pursuant to FGC Section 7852.27.

NOTICE

Pursuant to FGC, Sections 6650 - 6680, and CCR, Title 14, Sections 165 and 165.5, CDFW is authorized to collect information from kelp harvesting license and drying applicants to maintain a record of licensure. All information requested on the application is mandatory unless otherwise indicated. Pursuant to FGC, Section 391, CDFW may exchange or release to appropriate federal, state, or local agency or agencies in other states, for purposes of law enforcement, any information collected or maintained by CDFW.

PAYMENT POLICY

Personal Checks will be accepted if name and address are imprinted on the check. Make checks payable to "California Department of Fish and Wildlife". Checks returned to CDFW due to insufficient funds will render your license or permit invalid. CDFW may also deny the issuance or renewal of any license or permit if a person has failed to reimburse CDFW for the amount due. Any commercial activity performed without a valid license or permit is a violation of the FGC and therefore subject to enforcement action.

Credit Cards- Licenses, permits, and other entitlements may be purchased with debit or credit cards displaying the Visa or Mastercard logo.

Cash is not accepted at CDFW's license sales offices.

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME California Fish and Game Commission	CONTACT PERSON David Thesell	EMAIL ADDRESS fgc@fgc.ca.gov	TELEPHONE NUMBER 916-201-6201
DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400 Amend sec. 165 & 705.1, Commercial Harvest of Kelp & Other Aquatic Plants			NOTICE FILE NUMBER Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:
- | | |
|--|---|
| <input checked="" type="checkbox"/> a. Impacts business and/or employees | <input checked="" type="checkbox"/> e. Imposes reporting requirements |
| <input checked="" type="checkbox"/> b. Impacts small businesses | <input type="checkbox"/> f. Imposes prescriptive instead of performance |
| <input type="checkbox"/> c. Impacts jobs or occupations | <input type="checkbox"/> g. Impacts individuals |
| <input type="checkbox"/> d. Impacts California competitiveness | <input type="checkbox"/> h. None of the above (Explain below): |

*If any box in Items 1 a through g is checked, complete this Economic Impact Statement.
If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.*

2. The California Fish and Game Commission (Agency/Department) estimates that the economic impact of this regulation (which includes the fiscal impact) is:
- ☒ Below \$10 million
☐ Between \$10 and \$25 million
☐ Between \$25 and \$50 million
☐ Over \$50 million *[If the economic impact is over \$50 million, agencies are required to submit a [Standardized Regulatory Impact Assessment](#) as specified in Government Code Section 11346.3(c)]*
3. Enter the total number of businesses impacted: 32
- Describe the types of businesses (Include nonprofits): Commercial kelp and marine algae harvesters
- Enter the number or percentage of total businesses impacted that are small businesses: 100%
4. Enter the number of businesses that will be created: 0 eliminated: 0
- Explain: Opportunity for comm. marine algae harvest being kept open, except for sea palm closure in non-harvest area.
5. Indicate the geographic extent of impacts: ☐ Statewide
☒ Local or regional (List areas): Pigeon Point closure, San Mateo Co. southward
6. Enter the number of jobs created: 0 and eliminated: 0
- Describe the types of jobs or occupations impacted: Latest harvest data indicates that no commercial sea palm harvesters will be impacted by the proposed Pigeon Point, San Mateo County southward closure and harvest method changes are memorializing existing practices.
7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? ☐ YES ☒ NO
- If YES, explain briefly: Commercial harvest of wild marine algae is not allowed in the nearby states of OR and WA; therefore, the industry is not competing with nearby markets for wild harvested marine algae. While other coastal states in the U.S. have some of the same genera of marine algae as California, they do not compete with California harvest. See addendum.

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? \$ 3,335.36 annually
 - a. Initial costs for a small business: \$ 229.23 including GPS Annual ongoing costs: \$ 29.23 reporting Years: Annually
 - b. Initial costs for a typical business: \$ 229.23 including GPS Annual ongoing costs: \$ 29.23 reporting Years: Annually
 - c. Initial costs for an individual: \$ N/A Annual ongoing costs: \$ N/A Years: N/A
 - d. Describe other economic costs that may occur: Some may buy a \$200 hand-held GPS unit to record central latitude/longitude of sea palm harvest. No loss of income is expected from closure due to lack of harvest, or from harvest methods due to current industry practices.
2. If multiple industries are impacted, enter the share of total costs for each industry: N/A - only comm kelp & marine algae harvesters affected
3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. *Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted.* \$ 29.23
4. Will this regulation directly impact housing costs? ☐ YES ☒ NO
If YES, enter the annual dollar cost per housing unit: \$ _____
Number of units: _____
5. Are there comparable Federal regulations? ☐ YES ☒ NO
Explain the need for State regulation given the existence or absence of Federal regulations: Under the Marine Life Management Act, it is state Policy to ensure the conservation, sustainable use, & restoration of CAs living marine resources for the benefit of all citizens (F&G Code Section 7050).
Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: \$ 0

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: No direct benefits to the health and welfare of California residents, nor to worker safety. However, will benefit the State's natural environment by contributing to the conservation of sea palm.
2. Are the benefits the result of: ☐ specific statutory requirements, or ☒ goals developed by the agency based on broad statutory authority?
Explain: F&G Code Section 6653 provides the authority to regulate the take of kelp and other aquatic plants.
3. What are the total statewide benefits from this regulation over its lifetime? \$ harvest+ecosystem values
4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: None, no expansion is anticipated as a result of these regulations.

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: Alt 1: No change. Sea palm harvest would continue in a manner not specific to the species, which could result in loss of sea palm populations; current harvest methods would not be memorialized in regulation; and despite sea palm loss in southern range, harvest would be allowed without regard to population concerns from Pigeon Pt, San Mateo Co. south.

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: \$ 0 Cost: \$ 3,335.36
 Alternative 1: Benefit: \$ 0 Cost: \$ 0
 Alternative 2: Benefit: \$ N/A Cost: \$ N/A

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: Difficult to quantify benefits to the sea palm industry given the regulations do not necessarily provide monetary benefits. Additional environmental benefits are also difficult to monetize.

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? ☐ YES ☒ NO

Explain: Harvest reports are more enforceable for kelp resource management.

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises exceed \$10 million? ☐ YES ☐ NO

***If YES, complete E2. and E3
If NO, skip to E4***

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 1: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 2: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding \$50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented?

☐ YES ☒ NO

If YES, agencies are required to submit a [Standardized Regulatory Impact Assessment \(SRIA\)](#) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: No impact on the level of investment in the State is anticipated.

The incentive for innovation in products, materials or processes: No impact on the incentive for innovation in products, materials, or processes is anticipated.

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: No benefits to the health, safety, or welfare of CA residents, or to worker safety. Allows for better management of sea palm.

FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

☐ a. Funding provided in _____
Budget Act of _____ or Chapter _____, Statutes of _____

☐ b. Funding will be requested in the Governor's Budget Act of _____
Fiscal Year: _____

☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

☐ a. Implements the Federal mandate contained in _____

☐ b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

☐ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

☐ e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

☐ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

☐ 3. Annual Savings. (approximate)

\$ _____

☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

☒ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

☐ 6. Other. Explain _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

It is anticipated that State agencies will:

☐ a. Absorb these additional costs within their existing budgets and resources.

☐ b. Increase the currently authorized budget level for the _____ Fiscal Year

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any State agency or program.

☐ 4. Other. Explain _____

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

☐ 4. Other. Explain _____

FISCAL OFFICER SIGNATURE

DocuSigned by:
 **Dan Reagan**
6558B761E2D347D

DATE

2/24/2025

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY

 **Melisa A. Miller-Henson** **Bryan Cash**

2/24/2025

DATE

02/21/2025

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER

 _____

DATE

STD399 Addendum
Amend Sections 165 and 705.1,
Title 14, California Code of Regulations, Regarding
Commercial Harvest of Kelp and Other Aquatic Plants; Commercial
Kelp Harvesting and Drying Application; Monthly Harvest Reports

Sea palm (*Postelsia palmaeformis*) is an annual kelp marine alga that is managed under Section 165, Commercial Harvesting of Kelp and Other Aquatic Plants, within subsection (e), marine plants harvested as human food and classified as edible seaweed.

Sea palm is commercially harvested for use as human food. The majority of sea palm harvested on an annual basis is north of San Francisco, including 97 percent of statewide take within Mendocino County. Since 2020, commercial sea palm harvest has declined statewide, and the number of commercial harvesters has also declined since 2021.

Sea palm can be susceptible to overharvest for multiple reasons including its morphology, life cycle, and existing allowable harvest methods.

Subsection (e) of Section 165 contains regulations pertaining to species harvested for human food and classified as edible seaweed, including regulations specific to bull kelp harvest for human consumption. Sea palm is not specifically listed in current regulations; however, is an aquatic plant classified as edible seaweed and, thus, subject to the harvest regulations in subsection 165(e). Current allowable harvest methods for sea palm and other edible seaweed species include cutting and picking attached individuals and taking drift or loose individuals. There are no limits on the number of commercial kelp harvesting licenses sold, and no harvest limits or seasonal closures for sea palm.

Overview of Proposed Regulation Changes

The proposed regulation changes will define specific harvest methods; improve self-reported harvest log location data; prohibit harvest in a geographic location; require additional detail in the self-reported harvest information; update the kelp harvester license fee; and make other minor modifications.

Defining Specific Harvest Methods

The proposed regulation changes for sea palm define specific harvest methods for that create consistency of methods across all harvesters and potentially allows for the sea palm blades to regrow and reproduce. The proposed amendment defines a partial blade cut approach to cut the blades a minimum of one- and one-half inches above the meristem (a group of cells that divide rapidly to initiate growth). The proposed harvest method memorializes the current harvest methods utilized by the commercial sea palm harvesters and has received consensus support. Additionally, the Department recommends restricting the incidental take of marine invertebrate species during sea palm harvest as requested by the Department Law Enforcement Division (LED).

Improve Self-Reported Harvest Log-Data

To better manage the sea palm population, specific harvest location data is needed. The Department recommends improving self-reported harvest log data by requiring harvesters to report central latitude/longitude coordinates of harvest locations.

Geographic Harvest Prohibition

The Department also recommends prohibiting sea palm harvest in the southern portion of its range, from Pigeon Point in San Mateo County southward to the United States-Mexico border, due to concerns around its loss and lack of recovery in that area. LED recommends using Pigeon Point, San Mateo County (37° 11' north latitude) as the northern boundary for closure to aid in enforcing the regulations. The Department has confirmed that, based on the most recent harvest data, there are no commercial harvesters who would be impacted by the proposed closure.

Improve Self-Reported Harvest Method Information

The Department recommends amendments to self-reported harvest information to improve Department knowledge of commercial harvest methods and efforts for all marine algae species, by requiring:

- The day of harvest on the form DFW 113A “Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester’s Monthly Report” for all harvested algae.
- An indication of whether take was “drift” or “beached” on both the DFW 113 and DFW 113A harvest reports. For the purposes of the reports, drift will be defined as detached in the water and beached defined as detached on the beach/rocks.
- Additional information on species-specific harvest effort by specifying the number of individuals harvesting each day and estimated harvest time in minutes on both DFW 113 and DFW 113A. The existing requirement for the number of individuals harvesting for all reported harvest during the report period will be retained.

Other Improvements

Finally, other proposed amendments include:

- Updating the kelp harvester license fee pursuant to Section 713 of California Fish and Game Code;
- clarifying regulatory language by referring individuals interested in marine algae collections for broodstock purposes to the appropriate section of Title 14;
- updating outdated contact information to purchase a commercial kelp harvesting license, receive copies of informational maps depicting administrative kelp beds and fishing blocks, and request monthly harvest reports;
- providing reference to an existing Fish and Game Code section describing conditions under which a license can be revoked or not reissued; and
- other non-substantive changes for clarity and consistency.

Economic Impact Statement

A. Estimated Private Sector Cost Impacts

1. Answer: a. Impacts business and/or employees; b. Impacts small businesses; e. Imposes reporting requirements

The proposed amendments to the regulations for commercial harvest of kelp are anticipated to maintain sufficient opportunity to not induce significant adverse direct or indirect economic impacts to businesses in the state. The Department has confirmed via the latest harvest data that there are no commercial harvesters who would be impacted by the proposed closure from Pigeon Point in San Mateo County (37° 11' north latitude line) southward to the United States-Mexico border.

The proposed partial blade cut harvest method does not represent an adverse economic impact because it memorializes in regulation the current harvest method conducted by commercial sea palm harvesters, and has received consensus support from the sea palm harvesting community.

Additionally, the proposed reporting amendments for sea palm and other marine algae require modifications to the "Commercial Kelp Harvester's Monthly Report" (DFW 113) and "Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report" (DFW 113A) for all harvested algae; the forms are currently required and should only require five minutes of additional labor for each form for harvesters to complete the additional reporting requirements. The annual cost for compliance is estimated to be \$29.23 per business for filing 12 reports as described in this economic impact statement under section B. Estimated Costs.

Finally, the requirement to provide the central latitude and longitude locations of sea palm harvest will necessitate the harvester to have GPS capability; however, no specific equipment for such capability is prescribed. Thus, the requirement to provide specific harvest locations using coordinates provided by GPS should not represent an adverse economic impact. The proposed reporting may require the acquisition of a GPS location device (approximately \$200 one-time cost) or a mobile phone application if GPS capacity is not already possessed.

The Commission does not anticipate any significant impacts on the creation or elimination of jobs, the creation of new businesses, the elimination of existing businesses, or the expansion of businesses in California. Kelp and other marine algae harvesting businesses may have to adjust to changes in reporting procedures as described in the proposed regulation changes, but these changes are not expected to be substantial due to the opportunity for commercial kelp and other marine algae harvest remaining open, except for the proposed sea palm closure area south of Pigeon Point from which sea palm is not currently harvested. The cumulative effects of the changes statewide are expected to be neutral to expansion of businesses currently doing business within the state. No significant changes in total harvesting effort and commercial kelp and other marine algae harvesting expenditures to other businesses are expected as a direct result of the proposed regulation changes.

The nearby states of Washington and Oregon do not allow commercial harvest of wild populations of seaweed or algae, and there are not similar species of commercially harvestable sea palm, giant kelp, or bull kelp in east and south coast states or Hawaii. Sea palm does occur in Alaska, but there isn't a commercial fishery for wild populations. The East Coast does not

have sea palm, bull kelp or giant kelp and, while it does have some of the same genera of marine algae as California, the harvested species and associated businesses do not compete with California harvesters. Relocation of California commercial algae harvesters to other states as a result of the proposed regulation changes is highly unlikely, as it would be much more costly to relocate to those places rather than absorb the minimal cost of reporting and potentially purchasing a GPS unit (most kelp harvesters already have GPS devices).

B. Estimated Costs

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime?

Answer: \$ 3,335.36 annually

a. Initial costs for a small business: Total costs for reporting and if a GPS unit is needed are \$229.23. A kelp harvester must have a means to record the central latitude and longitude of harvest if they do not already have a suitable device. Widely available boat navigation equipment, or a GPS unit would enable the reporting of latitude and longitude. Costs for a GPS unit are estimated to be a \$200 one-time cost. Reporting costs are estimated to be \$29.23 annually for harvesters of giant kelp, bull kelp, agarweed, and edible seaweed.

b. Initial costs for a typical business: Total costs for reporting and a GPS unit, if needed, are \$229.23. A kelp harvester must have a means to record the central latitude and longitude of harvest if they do not already have a suitable device. Widely available boat navigation equipment, or a GPS unit, would enable the reporting of latitude and longitude. Costs for a GPS unit are estimated to be a \$200 one-time cost. Reporting costs are estimated to be \$29.23 annually for harvesters of giant kelp, bull kelp, agarweed, and edible seaweed.

c. Initial costs for an individual: = \$0 (N/A to individuals unless they are the business owner)

Annual ongoing costs: = \$29.23 for complying with reporting requirements for all harvesters of giant kelp, bull kelp, agarweed, and edible seaweed.

The last five years of harvest from 2019-2023 had a range of 4 license holders who reported sea palm take in 2023 and 12 license holders that reported sea palm take in 2021, as seen in Table 1. The Department has not verified that all harvest reports were received for the 2023 season and the number may not be an accurate depiction of the number who actually harvested sea palm. For this cost analysis, the Department estimated that all 12 license holders who reported sea palm harvest must purchase GPS equipment to provide the required latitude and longitude of harvest, bringing the total cost of GPS purchasing to \$2,400 for 12 sea palm harvesters. This cost represents an initial cost, while the expected ongoing costs from the regulation changes are associated with the estimated \$29.23 annual reporting costs for all harvesters of giant kelp, bull kelp, agarweed, and edible seaweed, as described in Answer 3 of this section.

Table 1: Years and Reported Sea Palm Harvest from License Holders

Year	Number of License Holders that Reported Sea Palm Harvest
2014	9

Year	Number of License Holders that Reported Sea Palm Harvest
2015	10
2016	9
2017	13
2018	10
2019	9
2020	8
2021	12
2022	9
2023	4

Source: Department analysis of licenses sold and reported sea palm harvest from Edible Seaweed/Agarweed Harvester's Monthly Reports

3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. *Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted.*

Answer: \$29.23 per kelp harvesting business.

The proposed changes to Form DFW 113 "Commercial Kelp Harvester's Monthly Report" and Form DFW 113A "Commercial Edible Seaweed/Agarweed Aquatic Plant Harvester's Monthly Report" for all harvested algae applies to all kelp license holders, not just the 12 that are harvesting sea palm commercially. The proposed change will result in an estimated additional five minutes of reporting per harvest report, as described in Table 2.

Table 2. Kelp and Edible Seaweed Harvester Reporting Costs Per Harvest Report

Task	Minutes	Hourly Rate	Cost
Record Keeping	5 (0.0833 hour)	\$29.23	\$2.44
Total	5 (0.0833 hour)	\$29.23	\$2.44

Sources: Department analysis; Bureau of Labor Statistics, Supervisor of Fishing Workers mean hourly wage rate, 2023, <https://www.bls.gov/oes/current/oes451011.htm>.

License holders typically file 12 reports on an annual basis, which makes the reporting costs for individual businesses the following: (5 minutes x \$29.23/hour) x 12 reports per year = \$29.23 annually. Based on the number of commercial kelp harvesting licenses sold from 2014 to 2023 (Table 3), which allow for commercial take of giant kelp, bull kelp, agarweed and edible seaweed, the mean average number of licenses is approximately 32. Applying the expected \$29.23 in annual reporting costs to all 32 expected license holders results in a total annual reporting cost of \$935.36.

Table 3: Total Number of Commercial Kelp Harvesting Licenses Sold

Year	Number of Licenses
2014	31
2015	33
2016	31
2017	35
2018	35
2019	36
2020	32
2021	31
2022	30
2023	23

Source: California Department of Fish and Wildlife analysis of licenses sold

5. Are there comparable Federal regulations? Answer: No

Explain the need for State regulation given the existence or absence of Federal regulations.

Answer: There are no comparable Federal regulations regarding kelp and other aquatic plants harvesting. Under the Marine Life Management Act, it is the policy of the state to ensure the conservation, sustainable use, and restoration of California's living marine resources for the benefit of all citizens of the state (Fish and Game Code Section 7050).

C. Estimated Benefits

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment.

Answer: Adopting the proposed regulation changes is anticipated to benefit the state's environment in the sustainable management of this resource. The Commission anticipates benefits to the state's sustainable management of sea palm by specifying harvest methods for sea palm, employing a precautionary approach to remaining sea palm populations in the southern range of the species, requiring specific harvest location to better inform management decisions for sea palm populations targeted for harvest, improving the Department's knowledge of allowable marine algae harvest methods utilized, providing further clarification of license allowances, and updating outdated references.

There are some challenges in the monetization of much of the anticipated benefits of the proposed regulation changes because a portion of the intended outcomes are comprised of non-market-traded ecosystem values.

No direct benefits to the health and welfare of California residents, or to worker safety are anticipated.

Fiscal Impact Statement

A. Fiscal Effect on Local Government

Answer: 5. No fiscal impact.

The Commission anticipates that the proposed regulatory action will have no fiscal effect on any local government entity or program.

B. Fiscal Effect on State Government

Answer: 3. No fiscal impact.

The Commission anticipates that the proposed regulatory action will have no fiscal effect on state government. The Department has determined that the proposed commercial harvest of sea palm action will not affect license or harvest royalty fee revenue or the Department's existing level of monitoring and enforcement activities.

Additionally, no other state agencies or programs would be affected by this regulatory action.

C. Fiscal Effect on Federal Funding of State Programs

Answer: 3. No fiscal impact.

The proposed regulatory action will not have a fiscal effect on federal funding of state programs.



Commercial Harvest of Kelp and Other Aquatic Plants

February 12-13, 2025

Presented to:

Fish and Game Commission

Presented by:

Rebecca Flores Miller
Environmental Scientist
Marine Region



Overview

- Sea palm and harvest regulation overview
- Recent outreach
- Commercial harvest data
- MARINe monitoring
- Species concerns
- Proposed amendments
- Proposed timeline



Photo Credit: R. Flores Miller



Sea Palm (*Postelsia palmaeformis*)

- Annual species, upper-mid intertidal
- Limited dispersal (1-5 meters)
- Recreational take is prohibited
- Commercial harvest is allowed
 - No license, harvest, or seasonal limits or closures
 - Allowable methods include cutting, picking, and collection of drift or loose individuals
- Concerns due to existing regulations and potential range contraction



Photo Credit: R. Flores Miller



Outreach and Engagement

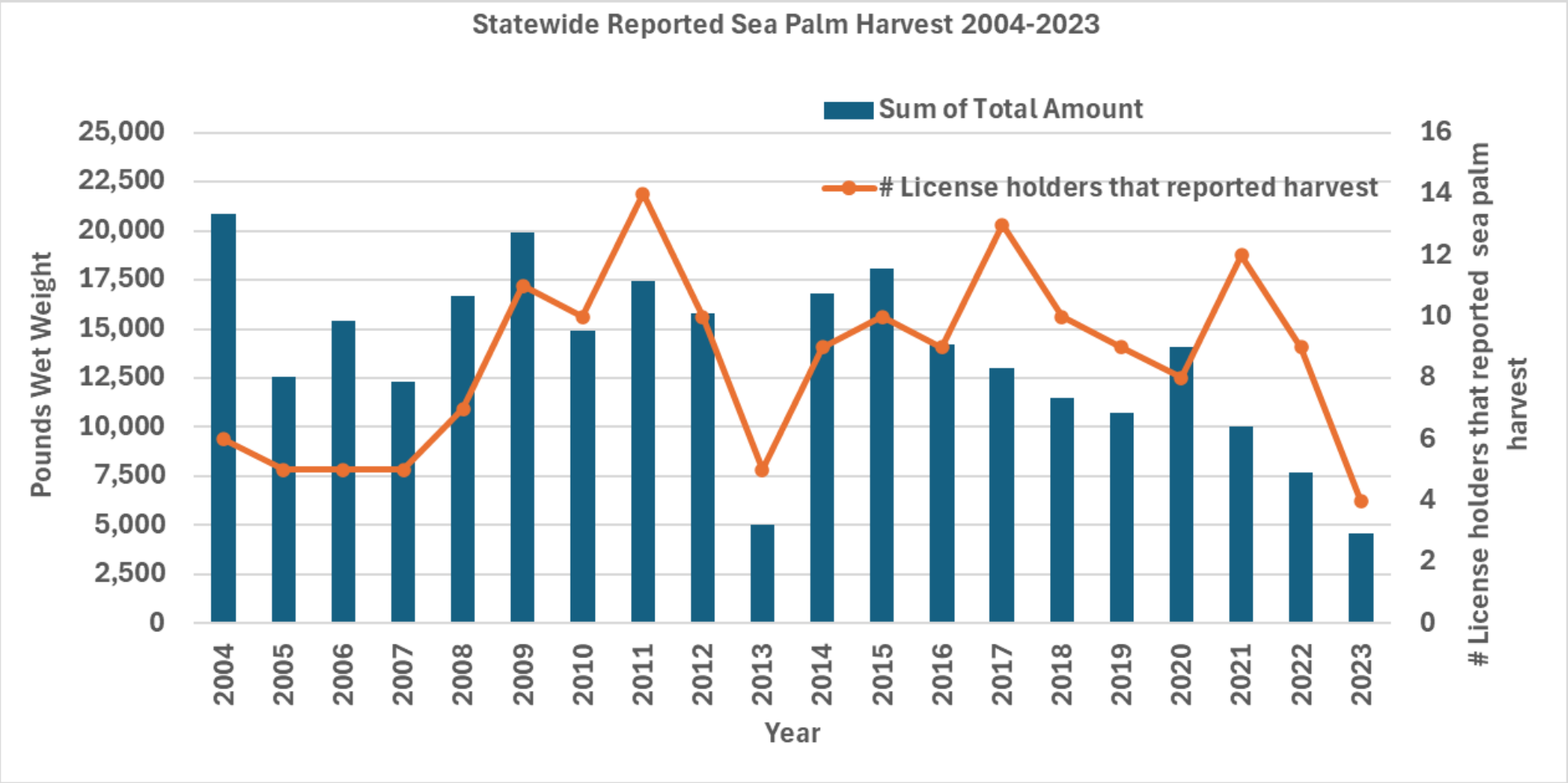


- Recent outreach and engagement (2022-present):
 - Site visits observing sea palm harvest
 - Sea palm harvester focused discussion meeting
 - Researcher discussions
 - Commission, Marine Resources Committee, and Tribal Committee meetings
 - Tribal notification
 - Comments from Tribes

Photo Credit: R. Flores Miller



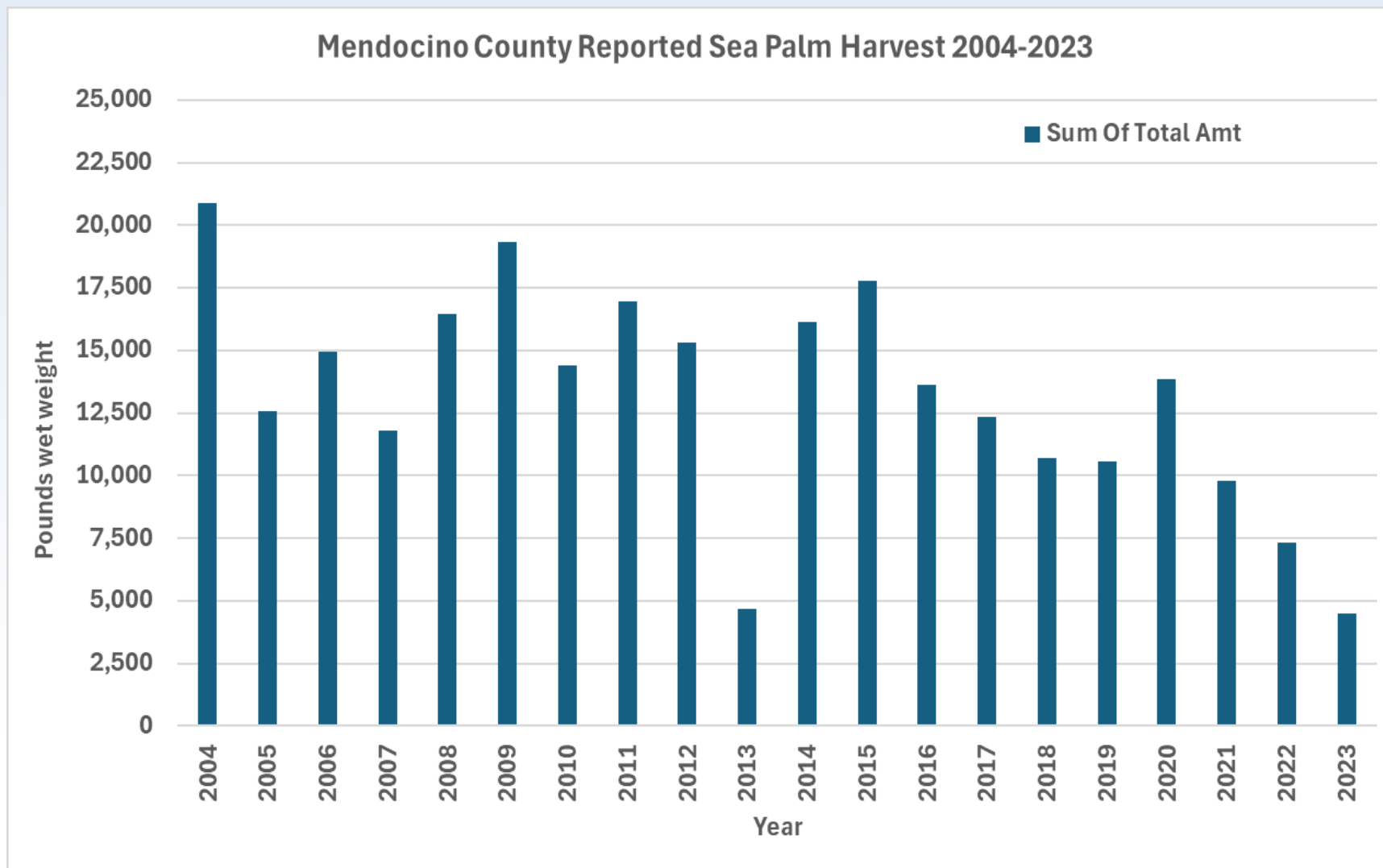
Sea Palm Harvest – Statewide



Data source: CDFW Edible Seaweed/Agarweed Harvester's Monthly Reports



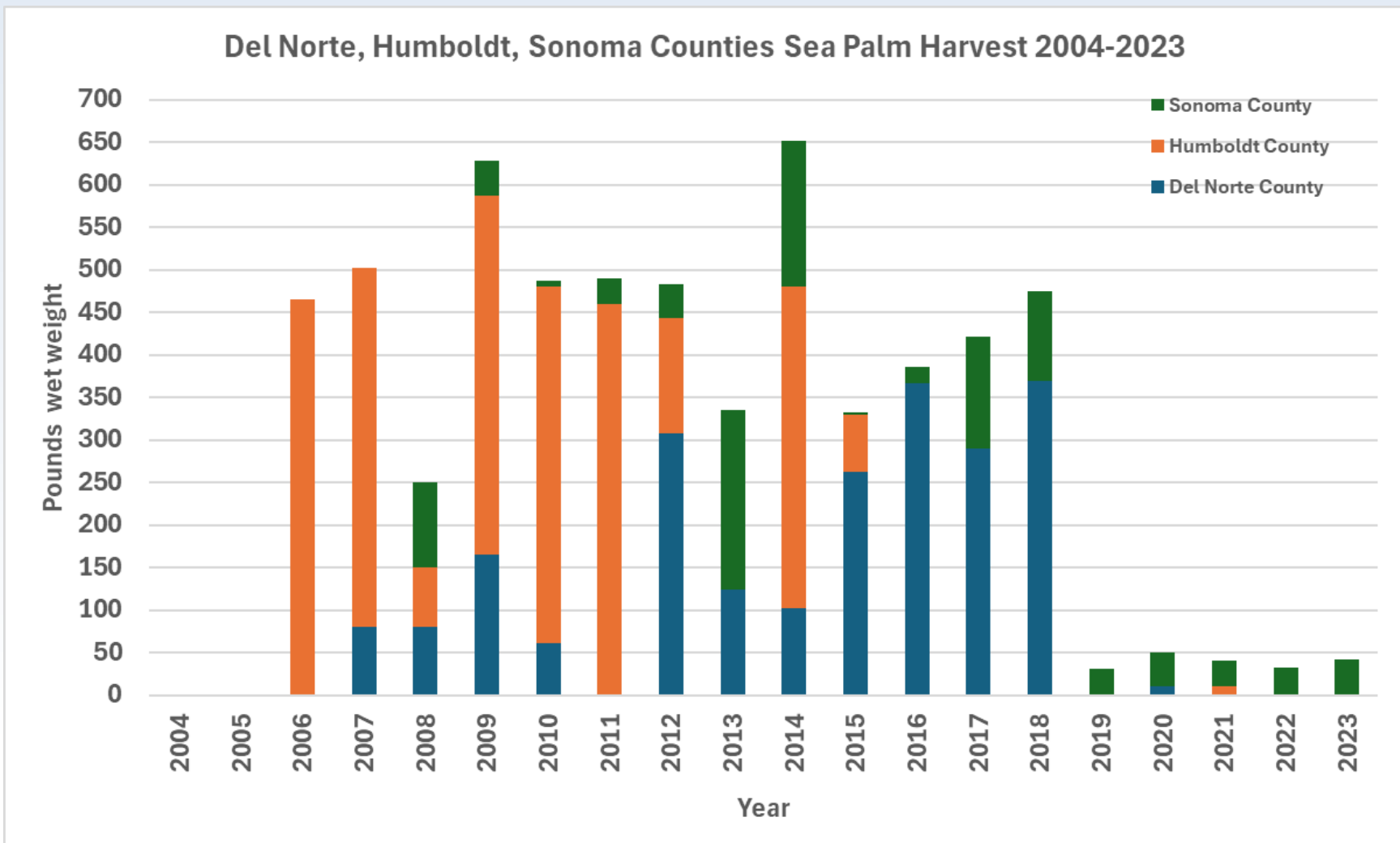
Sea Palm Harvest – Mendocino County



Data source: CDFW Edible Seaweed/Agarweed Harvester's Monthly Reports



Sea Palm Harvest – Del Norte, Humboldt, Sonoma



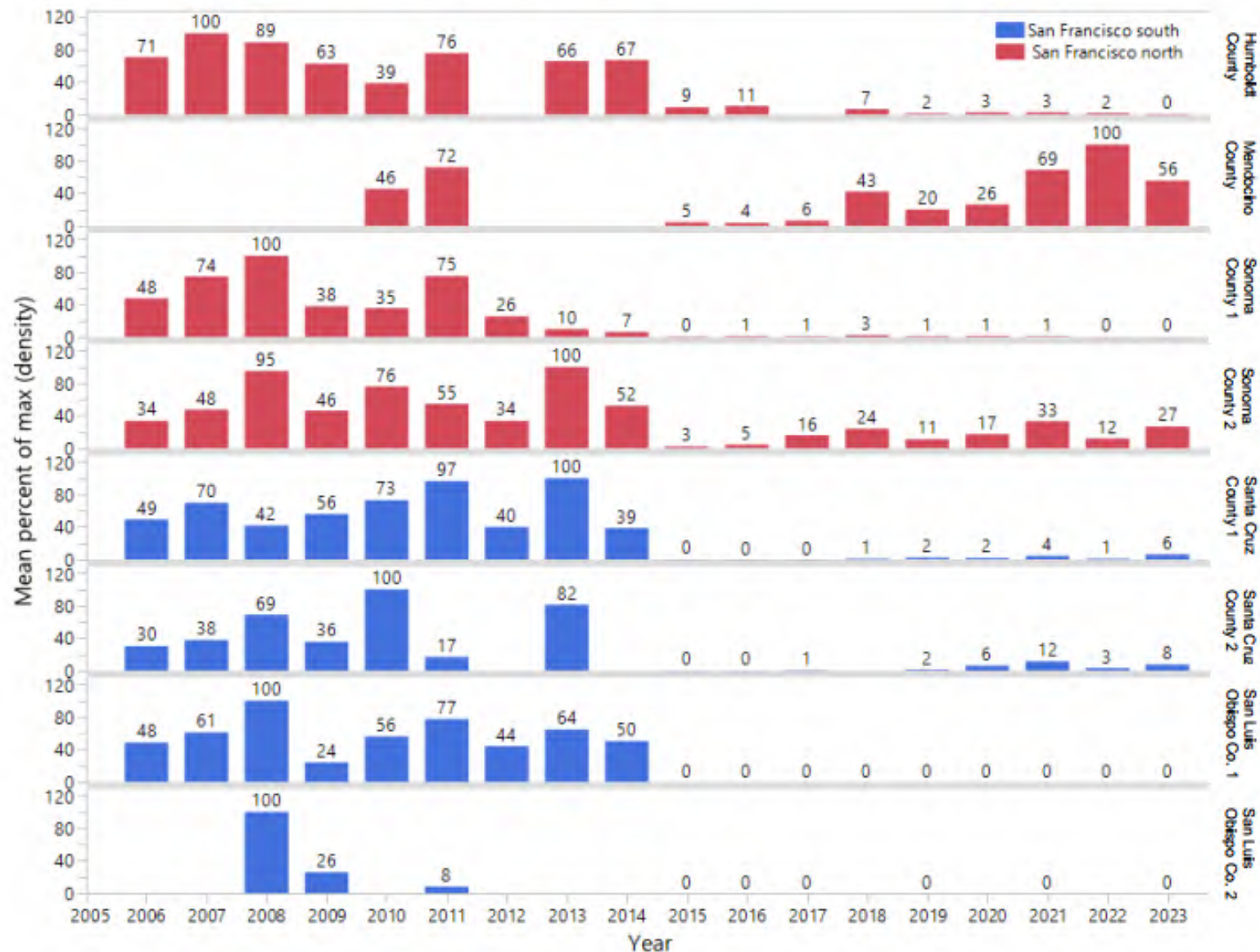
Data source: CDFW Edible Seaweed/Agarweed Harvester's Monthly Reports



Sea Palm Density Monitoring

- Drop in density after 2014
- Most loss in southern sites
- Slow recovery at most sites, esp. in southern range
- Lack of recovery at some sites

Figure source: Multi-Agency Rocky Intertidal Network (MARiNe)





Proposed Amendments to Sea Palm

- Define allowable harvest methods
- Incidental take of marine invertebrates is restricted
- Require central latitude/longitude coordinates of harvest location
- Prohibit harvest in the southern portion of range from Pigeon Point, San Mateo County (37° 11' north latitude) to the south



Photo Credit: R. Flores Miller



Proposed Amendments - Marine Algae Reporting

- Day of harvest
- Specify if take is “drift” or “beached”
- Additional information on harvest effort



Photo Credit: R. Flores Miller



Proposed Amendments Update, Clarify Reference

- License updates
- Clarify language/update outdated references
 - Clarify broodstock collecting permits for aquaculture
 - Replace outdated contact references
 - Update the location of informational maps
 - Update the location of monthly harvest reports
 - Refer to Fish and Game Code regarding license revocation



Proposed Timeline

- Notice – February 2025 (Today)
- Discussion/Adoption – April 2025
- Anticipated Effective Date – Jan 2026
– License effective upon filing



Photo Credit: R. Flores Miller

Thank You

kelp@wildlife.ca.gov



April 2025 FGC Meeting – 165 and 705.1 Commercial Harvest of Kelp - Email PSOR

From Maxey, Samara [REDACTED]
Date Tue 03/25/2025 12:29 PM
To FGC <FGC@fgc.ca.gov>

Good Afternoon,

The California Department of Fish and Wildlife is submitting this email to notify the California Fish and Game Commission that there have been no substantive comments received, amendments to the proposed regulatory text, or additional information gathered for the proposed 165 and 705.1 Commercial Harvest of Kelp and Other Aquatic Plants; Commercial Kelp Harvesting and Drying Application, Monthly Harvest Reports rulemaking since the filing of the Initial Statement of Reasons. Therefore, this email is prepared in lieu of a Pre-adoption Statement of Reasons.

Please let me know if you have any questions.

Thank you,

Samara Maxey (she/her)
Staff Services Manager I, Marine Region
Department of Fish and Wildlife
1010 Riverside Parkway
West Sacramento, CA 95605

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE 

Committee Staff Summary for November 6-7, 2024 MRC

For background purposes only

6. Recreational Crab Trap Gear Options and Trap Validation for Commercial Passenger Fishing Vessels

Today's Item

Information ☐Action ☒

Discuss Department-proposed regulation changes related to gear and marine life entanglement concerns, and trap validation for commercial passenger fishing vessels (CPFVs); develop potential committee recommendation.

Summary of Previous/Future Actions

- | | |
|---|------------------------------|
| • Commission granted, in part, a regulatory petition concerning crab validation stamps for CPFVs | June 14-15, 2023 |
| • MRC received Department update on scope of potential recommendations for changes to recreational crab regulations | March 19, 2024; MRC |
| • MRC received and discussed Department overview of proposed recommendations for changes to recreational crab regulations | July 17-18, 2024; MRC |
| • Today, receive Department update on proposed regulation changes and develop potential MRC recommendation | November 7, 2024; MRC |

Background

In June 2023, the Commission took action on a regulation change petition from the CPFV industry related to CPFV-specific crab trap validation stamps and modifying surface buoy gear requirements. The Commission granted the CPFV validation stamps part of the petition and requested that the Department work with recreational crab fishery participants to develop other regulation options related to gear and entanglement concerns.

Following the June meeting, Department staff worked with CPFV and sport fishing representatives to develop proposed changes to recreational crab regulations, followed by a survey of 2023 crab validation stamp purchasers in spring of 2024. The survey was intended to inform the efficacy of a validation stamp for management, and the potential utility of a CPFV-specific validation stamp.

At the July MRC meeting, the Department reported survey results and provided an overview of its proposed changes to recreational crab regulations and the rationale for those changes (Exhibit 2). The Department presented five potential regulation changes to address gear and marine life entanglement concerns and to create a new trap validation for commercial passenger fishing vessels. The Department committed to conducting additional outreach, continue analyzing the crab validation survey results, and present a final recommendation to MRC at this meeting.

Committee Staff Summary for November 6-7, 2024 MRC
For background purposes only

Update

Following the July MRC meeting, the Department conducted additional outreach regarding the proposed regulation changes via a public webinar, the Dungeness Crab Fishing Gear Working Group, the Dungeness Crab Task Force, and tribal notifications. Today, the Department will present an update and will highlight any changes from the July recommendation, as informed by recent outreach (Exhibit 1).

Significant Public Comments (N/A)

Recommendation

Commission staff: Advance to rulemaking the proposed changes to recreational crab trap regulations related to gear and marine life entanglement concerns and trap validation for commercial passenger fishing vessels, as recommended by the Department and discussed today.

Department: Advance to rulemaking the proposed changes to recreational crab trap regulations related to gear and marine life entanglement concerns and trap validation for commercial passenger fishing vessels, including to: (1) create a specific CPFV validation stamp; (2) prohibit tampering with hoop nets without permission of operator; (3) clarify northern hoop net surface gear; (4) update recreational entanglement evaluation, including triggers, and management actions [do not include northern hoop nets]; and (5) prohibit use of line required in other fisheries, as described today. Schedule for notice hearing in April 2025.

Exhibits

1. Department presentation
2. Department July 2024 presentation to MRC (*for background purposes only*)

Committee Direction/Recommendation

The Marine Resources Committee recommends that the Commission advance to rulemaking the proposed changes to the recreational crab trap fishery related to gear and marine life entanglement concerns and trap validation for commercial passenger fishing vessels as recommended by the Department, and schedule public notice for April 2025.

Memorandum

Date: April 4, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Initial Statement of Reasons for Agenda Item for the April 16-17, 2025 Fish and Game Commission meeting to Amend Sections 29.80, 29.85, 195 and 701, Title 14, California Code of Regulations - RE: Recreational Crab Regulations**

The Department of Fish and Wildlife (Department) requests the Fish and Game Commission (Commission) authorize publication of notice of its intent to amend sections 29.80, 29.85, 195, and 701, Title 14, California Code of Regulations. Authorization of notice at the April 2025 Commission meeting will allow for discussion at the June 2025 Commission meeting and possible adoption at the August 2025 Commission meeting. If adopted, the Department requests the regulations become effective upon filing, prior to the November 1, 2025, opening of the Dungeness crab season.

The Department is submitting the attached Initial Statement of Reasons (ISOR) proposing to update regulations regarding hoop net use and recreational entanglement evaluation. Other changes include a line marking prohibition, a new Commercial Passenger Fishing Vessel (CPFV) Crab Validation, and updates to the CPFV logbook.

If you have any questions on this item, please contact Dr. Craig Shuman, Marine Region Manager, at (805) 568-1246 or by email at R7RegionalMgr@wildlife.ca.gov. The Department point of contact for this rulemaking is Senior Environmental Scientist (Specialist), Christy Juhasz, who can be contacted at WhaleSafeFisheries@wildlife.ca.gov.

ec: Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman, D. Env., Regional Manager
Marine Region

Eric Kord, Assistant Chief
Law Enforcement Division

Brent Chase, Captain
Law Enforcement Division

Melissa Miller-Henson, Executive Director
Fish and Game Commission
April 4, 2025
Page 2

Tiffany Wolvek, Lieutenant (Specialist)
Law Enforcement Division

Garrett Wheeler, Attorney III
Office of General Counsel

Joanna Grebel, Env. Program Manager
Marine Region

Ona Alminas, Env. Program Manager
Regulations Unit

Chelle Temple-King, Senior Regulatory Scientist
Regulations Unit

David Thesell, Program Manager
Fish and Game Commission

Susan Ashcraft, Marine Advisor
Fish and Game Commission

State of California
Fish and Game Commission
Initial Statement of Reasons for Regulatory Action

Amend Sections 29.80, 29.85, 195, and 701
Title 14, California Code of Regulations

Re: Recreational Crab Fishing Gear and Commercial Passenger Fishing Vessel Trap Validation

I. Date of Initial Statement of Reasons: March 3, 2025

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing

Date: April 17, 2025

Location: Sacramento

(b) Discussion Hearing

Date: June 11, 2025

Location: Sacramento

(c) Adoption Hearing

Date: August 14, 2025

Location: Sacramento

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR) and all references to “Dungeness crab” are to the species *Metacarcinus magister*.

The proposed regulatory changes focus on updates to recreational crab gear restrictions. These regulations were last subject to major amendments in September 2023 for hoop nets and November 2021 for crab traps. The proposed amendments here represent the cumulation of the California Department of Fish and Wildlife’s (Department’s) internal discussion as well as input from the regulated public, in the form of a regulations change petition submitted to the California Fish and Game Commission (Commission) (Petition #2022-11), and a crab validation survey sent to a random subset of 2023 crab trap validation holders. The proposal was also presented to the Marine Resources Committee in July and November 2024.

The proposed changes are necessary to update the use of hoop nets, provide additional tools to address entanglement risk of recreational crab traps, and prohibit unique line marks required in other fisheries from being used in recreational gear. They are also needed to prohibit tampering of gear by unauthorized users and to clarify requirements for surface buoys when used north of Point Arguello, Santa Barbara County, and address a Commission-granted petition requesting the establishment of a Commercial Passenger Fishing Vessel (CPFV) validation.

Background

Hoop net use in the recreational Dungeness crab fishery has increased. The Department's Marine Law Enforcement Division has observed more hoop nets during their on-the-water patrols, and a recent Department survey also documented an increased preference for hoop nets over crab traps. .

A recreational entanglement evaluation for crab traps was first implemented during the start of the 2021-22 Dungeness crab season and modeled after the commercial fishery's Risk Assessment Mitigation Program, or RAMP (Section 132.8). The intent of these programs is to reduce entanglement risk of whales and sea turtles protected and listed under the federal Endangered Species Act (ESA) with fishing gear. Entanglement risk evaluations in both fisheries are conducted regularly during the Dungeness crab season. The Dungeness crab Fishing Gear Working Group (Working Group) is comprised of recreational and commercial fishery participants as well as representatives from non-profit environmental organizations who provide recommendations on management actions for consideration by the Department's Director during each risk assessment. The available tools to assess and respond to risk for the recreational entanglement evaluation are limited compared with the commercial program. In recent seasons, some Working Group members raised concerns about the inability to restrict the recreational fishery in the same area where the commercial fishery was delayed due to a high number of entanglements. Under RAMP, the commercial crab fishery is not only subject to season delays or early closures, but also may be restricted by a trap gear reduction or a depth constraint. These proposed regulations to the recreational entanglement evaluation, which are intended to better align the two sectors of this fishery, include the addition of a trigger for confirmed entanglements, and depth constraint as a management action.

New line marking requirements adopted for other commercial fixed gear fisheries (e.g., U.S. West Coast Dungeness crab fisheries) address identification of fishing gear observed in confirmed entanglements. Manufacturers are already making these uniquely marked lines available in the marketplace. A line marking prohibition for hoop nets and crab traps would prevent these new manufactured lines from being used on California recreational crab gear (in order for them to be distinguished from commercial), and should not change methods to how gear is currently rigged.

CPFVs take customers on fishing trips and provide fishing gear, either with hoop nets or crab traps. A CPFV-specific validation would be required from CPFV owners when their fishing operations utilize crab traps so that CPFV customers would no longer be required to purchase the individual trap validation. In addition, CPFV fishing logbooks will include new data fields of number of crab traps and hoop nets fished to provide CPFV gear effort during each fishing trip to the Department, data which are currently lacking and are not readily supplied by CPFV customers. This change would increase the quality and quantity of data to inform fishery management and entanglement risk.

Current Regulations

Current regulations for the recreational Dungeness crab fishery specify seasons, size limits, bag and possession limits, closed fishing areas, and gear restrictions. A recreational fishing license is required to participate in recreational crab fishing, except from a public pier or jetty.

All individuals who use a crab trap are required to have a crab trap validation. Recreational crab traps (including crab loop traps) may be used north of Point Arguello, Santa Barbara County, to take all species of crabs (subsection 29.80(e)). Individuals are not allowed to operate a trap owned by another person unless they have in possession written permission from the operator of the trap that matches the GO ID number located on the main buoy, and this permission can be transmitted electronically (subsection 29.80(a)(3)). Traps are required to have a main buoy and a smaller red marker buoy attached no farther than 3 feet away from the main buoy. Regulations prescribe a minimum size for the main buoy, and a specific size for the marker buoy (subsection 29.80(c)(3)). Traps have a service interval not to exceed nine days (subsection 29.80(c)(5)). An individual may service up to ten of their traps with the ability to service up to ten additional traps with permission from the operator (subsection 29.80(c)(6)). The main buoy of crab traps must be marked with either the operator's GO ID or a CPFV's commercial boat registration number (subsection 29.80(c)(3)(A)).

Crabs can also be taken recreationally by hand, crab loop trap (snare), or hoop net. Hoop nets may be used year-round and have a service interval of two hours (subsection 29.80(b)(2)). They are considered abandoned if left out longer than two hours (subsection 29.80(b)(3)). Current regulations do not limit the number, size or color of buoys used on hoop net gear. Hoop nets (not used from shore) must have a surface buoy that is marked to indicate specific operator either by an individual's GO ID, CPFV's vessel commercial boat registration number, or guide license's identification number (subsection 29.80(b)(5)). There is no limit on the number of hoop nets that may be operated by an individual or CPFV when used north of Point Arguello, Santa Barbara County (subsection 29.80(b)(4)(B)).

A CPFV is allowed to operate up to 60 traps (Subsection 29.85(a)(4)). Customers are required to have a recreational fishing license and a crab trap validation when crab traps are used onboard CPFVs. The owner and operator of a CPFV is required to keep and submit a complete and accurate record of fishing activities on a logbook (subsections 190(a) and 190(b)).

Recreational crab traps are evaluated for marine life entanglement risk during the Dungeness crab season under a marine life concentration trigger (subsection 29.80(c)(7)(A)). Under the recreational evaluation when marine life concentration triggers are met, the Director may declare a management action by RAMP Fishing Zone (subsection 29.80(c)(7)(C)). The only management actions the Director can implement are a fleet advisory to employ voluntary practices or a trap prohibition at the start or end of the recreational Dungeness crab season (subsection 29.80(c)(7)(B)). This recreational entanglement evaluation regulatory framework also references definitions and management triggers described in the RAMP regulation (Section 132.8) for the commercial Dungeness crab fishery.

Proposed Regulations

Proposed regulations primarily update recreational crab gear of hoop nets used north of Point Arguello, Santa Barabara County, and crab traps, as well as update the crab validation.

- **Add a hoop net tampering prohibition:** The proposed regulation would prevent unlawful tampering of hoop nets. (Proposed subsection 29.80(a)(3)(B)).

- **Prohibit the use of other West Coast fisheries' unique line marks/colors on hoop net and crab trap gear:** The proposed regulation would prohibit recreational gear for take of crustaceans from using another fishery's unique line marking. (Proposed subsection 29.80(a)(4)).
- **Clarify surface gear requirements for northern hoop nets:** The proposed regulation would standardize surface gear configurations of hoop nets used north of Point Arguello, Santa Barbara County). (Proposed subsection 29.80(b)(5)).
- **Update the marine life entanglement evaluation process:** The proposed regulation would add a trigger for confirmed entanglements of any protected species referenced in RAMP as well as a depth constraint under the available management actions (Proposed subsections 29.80(c)(7)(A), 29.80(c)(7)(B), and 29.80(c)(7)(D)).
- **Add a separate CPFV crab trap validation:** The proposed regulation would modify the current trap validation, creating a separate CPFV validation. In addition, new fields will be added to the CPFV logbook and a new fee for the CPFV validation. (Proposed subsections 29.85(a), 195(a), 195(b), 195(d), 701(i), and 701(j)).

The proposed regulatory package also includes clarifying and non-substantive edits to sections 29.80 and 195.

Amend Subsection 29.80(a)(3)

The tampering prohibition applies to crab traps under this subsection and is being amended to include hoop nets. A service interval for hoop nets requires that they be raised and inspected every two hours and pulled at the conclusion of a fishing trip. Since any gear left unattended in the open ocean has a higher likelihood of interactions by other users, a regulatory prohibition is proposed to further discourage and make unlawful tampering of hoop nets based on the marking requirements of the operator on the main surface buoy.

The amendment to this subsection will add hoop nets under a new subsection title of: "Tampering Prohibition." Separate subsections will be added for crab traps (A) and hoop nets (B). The crab trap subsection retains the same language. The proposed hoop net subsection will make it unlawful to disturb, move or damage any hoop net that belongs to another person while exempting hoop nets operated by a licensed guide who supplies hoop nets to clients on guided trips (subsection 29.80(b)(5)(B)). When on a vessel, hoop nets may be used by others, provided that the owner or operator of the hoop net is also present on the vessel. Required marking of the GO ID number is necessary to identify operators to further support enforcement of this provision. Additional clarification is necessary to make clear that hoop net limits described in subsection 29.80(b)(4) still apply under this provision.

Add Subsection 29.80(a)(4)

The addition of this new subsection would make it unlawful to mark or use colored lines required by other fisheries operating in the U.S. West Coast Exclusive Economic Zone (state or federal fisheries) from being used in recreational gear used to take crustaceans. This prohibition is necessary to prevent misuse by other fisheries of uniquely marked line to ensure positive identification of unique marks correspond to correct fishery type in confirmed

entanglements.

Amend Subsection 29.80(b)(5)

The amendment to this subsection only applies to hoop nets used north of Point Arguello, Santa Barbara County, to implement a standard surface gear configuration that uniquely identifies hoop nets. This change will also differentiate hoop net surface gear from what is allowed on crab traps, aiding enforcement and entanglement identification. The amendment will specify that a main buoy is required to be no more than 6 inches in diameter and no more than 14 inches in length. An optional marker buoy may be used and must be yellow in color, no more than 6 inches in diameter and no more than 14 inches in length, and must be attached to the main buoy no more than three feet away. This marker buoy is optional due to the various modes and depths that hoop nets may be deployed. Limiting the amount of surface line is necessary to minimize entanglement risk, especially when the gear is used during elevated levels of marine life entanglement risk.

Specifying the maximum length and maximum diameter size of the main and marker buoys is necessary to allow for a range of buoy sizes to accommodate smaller buoys as well as a standard-sized buoy that is commonly sold with fishing gear. One can still use a minimum-sized crab trap main buoy with their hoop net; however, they would no longer be allowed to have the attached red marker buoy since the hoop net marker buoy, if used, must be yellow to aid in entanglement identification. Table 1 shows a summary of the surface gear requirements between crab traps and the proposed hoop net changes. The additional marker buoy will facilitate removal within the required service interval period and compensate for the effects of surface gear getting pulled underwater by strong ocean tidal currents.

Table 1. Summary of surface gear allowances north of Point Arguello (Santa Barbara County) by gear type (take of crustaceans).

Gear: Location	Main Buoy Dimension	Marker Buoy Color/Dimensions	Length of Line Between Buoys
Crab Traps: North of Point Arguello (where they are only allowed)	Minimum size: 5 inches diameter and 11 inches in length	Must have a red marker buoy that is at least 3 inches by 5 inches	Maximum distance from the main buoy is 3 feet
Hoop Nets: North of Point Arguello*	Maximum size: 6 inches in diameter and 14 inches in length	Optional: If using an additional marker buoy, it must be yellow; maximum size 6 inches in diameter and 14 inches in length	Maximum distance from the main buoy is 3 feet

**Hoop net surface gear proposed in this rulemaking.*

Amend Subsections 29.80(b)(5)(A), (B), (C)

The word “main” is added to subsequent subsections 29.80(b)(5)(A), (B), and (C). This change is necessary to clarify for the operator that the primary or main buoy is where the marking for commercial boat registration number (A), guide license (B), or the GO ID (C), rather than the

proposed optional marker buoy.

Amend Subsection 29.80(c)(7)

Subsection (c)(7)(A)

Amendments to paragraph (A) of this subsection update references to recently updated commercial RAMP regulations (Section 132.8, OAL Notice #Z-2024-1126-04 and Z2024-0326-03) and adds confirmed entanglements as an additional entanglement risk trigger. Both RAMP and the recreational entanglement evaluation are intended to minimize entanglement interactions with the following ESA protected species: humpback whales, blue whales and Pacific leatherback sea turtles. Marine life concentration and confirmed entanglement triggers will now both be used to evaluate recreational crab trap gear entanglement risk similar to the RAMP program. The California recreational crab trap fishery has been identified as the source fishery in three humpback whale entanglements occurring in 2015, 2017, and 2019 (Saez et al. 2021 and NOAA Fisheries 2020). Recreational crab trap gear has not been attributed to an entanglement of blue whales nor leatherback sea turtles.

Subsection (A)(1) is expanded to include under subsection a. marine life concentration numerical triggers and under subsection b. confirmed entanglement numerical triggers with references to pertinent RAMP regulations. The time periods for marine life concentration triggers “in the fall” or “in the spring” are removed for clarity as the RAMP references already identify the duration of time when triggers are applicable. The inclusion of a confirmed entanglement trigger allows the recreational entanglement evaluation to be responsive to any increased entanglement reports of protected species.

Subsection (c)(7)(B)

The management actions of season delay, and closure are updated in subsection (c)(7)(B)2. to include references to the RAMP regulations that refer to the confirmed entanglement triggers (subsection 132.8(c)(1)) as noted above for (c)(7)(A).

A depth constraint is added as an additional management action under subsection (B)(4.). This change is necessary to better align available management actions between the recreational evaluation and RAMP. The regulation will explicitly apply to the use of crab traps within a depth contour defined under Title 50, Code of Federal Regulations Part 660, Section 660.71 (Revised March 1, 2023), 660.72 (Revised December 1, 2023), and 660.73 (Revised December 1, 2023) and incorporated by reference. The Federal regulatory references are available from <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=221972&inline>.

Subsection (c)(7)(C)

This subsection is updated to reference the correct definition of fishing zones under subsections 132.8(a)(6)(A)-(E) of the RAMP regulations. This change is necessary to ensure the correct cross-reference.

Subsection (c)(7)(D)

Notice via Director declaration will be updated to include “or other management action” in addition to the delay or closure already in regulation. The new subsection 29.80(c)(7)(B)4. of

the depth constraint will also be referenced. The details of a depth constraint as a result of these regulations would be specified in any Director declaration (e.g., a depth constraint limiting crab traps to shallower than 30 fathoms). This change is necessary to align with the proposed management actions and stated in the Director's declaration.

Subsection (c)(7)(G)

A clarification is added to ensure the reference means the subject section, 29.80(c)(7)(B).

Amend Section 29.85(a)

Crab trap validations were initially adopted by the Commission in 2021 to identify participants that use crab traps in order to provide public outreach and collect essential fishery information.

This subsection is amended with a new title: "Crab Trap Validations" and separate subsections for requirement of purchasing: (1) a Recreational Crab Trap Validation and (2) a new proposed CPFV validation. The addition will allow CPFV owners to purchase a validation that designates their fishing operation as using crab traps. CPFV customers will no longer need the Recreational Crab Trap Validation, but this will still be required when fishing with crab traps from other modes (e.g., private vessel, shore, or kayak). This change is necessary to respond to constituent concerns shared by petition #2022-11 submitted to the Commission.

Amend Section 195

Subsection (a)

The subsection describes CPFV logbooks and is amended to remove forms DFW 195A and 195B from incorporation by reference. In 2016, the Commission completed a rulemaking (Office of Administrative Law's File ID #2016-0523-04S) that transitioned the CPFV logbooks from paper logs to electronic form, available for completion at the Department website <https://apps.wildlife.ca.gov/marinelogs/cpfv/>, while also maintaining a paper version of the same form.

The proposed amendments add instructions as to when a CPFV owner/operator needs to complete a log for a daily fishing trip under subsections (1) and (2). This language is necessary to make clear to CPFV operators and staff to complete the logs on a daily basis.

Subsection (b)

A new subsection is inserted to list in the body of the regulation itself all current data fields in use by the forms that are removed from incorporation by reference. The Department also maintains a hard copy of the form with the same form fields. The 2016 rulemaking that last updated these forms moved the forms from Appendix A of Title 14, and updated the instructions. A prior rulemaking in 2013 replaced the forms, including the data fields of a prior skipper's log, for compatibility with CPFVs (Office of Administrative Law's File ID #2013-0829-02s). Subsection (b) if this rulemaking lists those data fields still in use from the 2013 rulemaking, and adds further instructions describing further some fields of the CPFV logbook forms. New fields are also being included that request number of traps and number of hoop nets only when crab fishing north of Point Arguello, Santa Barbara County. By adding these fields, the Department will be able to estimate crab gear fishery effort of the CPFV sector

during the Dungeness crab season to inform fishery management, data that is currently lacking. Subsequent subsections will be renumbered. Fields (b)(1) through (b)(27) are existing fields introduced with the 2013 rulemaking. Below are the data fields by subsection number with the necessity and justification as presented by the 2013 ISOR (Commission, 2013).

Table 1. Existing Data Fields (from forms 195A and 195B) as presented by Commission (2013), and proposed fields listed in Section 195

Field name	Necessity and Justification
(1) Log date	This information gives the date of fishing activity and is used by law enforcement officers to determine compliance with regulations concerning species fished and seasonal restrictions. It is used by Department scientists to evaluate when fish species are caught, and used in producing estimates of catch and effort for fisheries management.
<u>(2) Vessel name</u>	This information is used to confirm the Vessel ID Number. It is important the Vessel ID Number is correct for enforcement purposes and for accurate catch and effort statistics that are mandated by law and used in fisheries management.
<u>(3) Vessel ID Number</u>	This information is used to confirm current status of the commercial passenger fishing vessel license (issued under Fish and Game Code § 7920) and commercial boat registration (issued under Fish and Game Code § 7881). It is important to know the number of unique vessels participating in the fishery and the extent of their participation for accurate catch and effort statistics that are mandated by law and used in fisheries management.
<u>(4) Port of landing</u>	This information is used to confirm the port code. It is important the port code is correct for enforcement purposes and for accurate catch and effort statistics that are mandated by law and used in fisheries management.
<u>(5) Port code</u>	This information is used to determine the port where the vessel lands. It allows scientists to evaluate species caught, their distribution, and together with other data allows evaluation of fishing effort. Area specific information is important in understanding the fisheries, crafting regulations and evaluating the impacts of regulations.
<u>(6) Operator's name</u>	This information is used by law enforcement officers to verify the activity record was submitted by the operator of the vessel. It also protects the owner and operator of the vessel by documenting that this is a true record of the vessel's activity.
<u>(7) Operator's signature</u>	This information is used by law enforcement officers to verify the activity record was submitted by the operator of the vessel. It also protects the owner and operator of the vessel by documenting that this is a true record of the vessel's activity.
<u>(8) No fishing activity for the month of</u>	This information is used by Department scientists to provide accurate estimates of recreational catch and effort for fisheries management, and assists in determining compliance in submitting logs.
<u>(9) Trip type</u> <u>(19) Departure time</u> <u>(20) Return time</u>	This information allows law enforcement officers to determine time spent at sea and the compliance with daily bag and possession limits for fish species. This information is used by Department scientists to determine effort of fishing activity for use in fisheries management.

Field name	Necessity and Justification
<u>(10) Target species</u>	This information is used by Department scientists to determine what species are pursued and along with catch information, allows an informal evaluation of success. These data are also used in producing catch and effort estimates for fisheries management.
<u>(11) Fishing method</u>	This information is used by Department scientists to evaluate the impacts of different fishing practices, and may be used in developing management measures. In addition, mortality rates of released fish vary by fishing method for some species (e.g., salmon) and this information is used in producing fishing mortality estimates for those species.
<u>(12) Bait</u>	This information is used by Department scientists to evaluate the impacts of different fishing practices, for fisheries management.
<u>(13) Species</u> <u>(14) Number kept</u> <u>(15) Number thrown back</u> <u>(16) Lost to sea lions</u>	This information is used by Department scientists to determine species fish caught, discarded and lost to sea lions. Species listed are generally those that are frequently caught, are actively managed by State and federal fisheries agencies or are of biological importance. Discard and loss to sea lion data allows for estimates of incidental mortality. Catch data is used by law enforcement officers to determine compliance with daily bag, possession and boat limits (CCR Title 14 §1.17, §1.59, §195(a)(1), §195 (e)).
<u>(17) Descending device</u>	Releasing fish with descending devices reduces fishing related mortality. This information is used by Department scientists to evaluate the impact of different fishing practices and provide data necessary for the development of management measures and for the production of more accurate estimates of fishing mortality.
<u>(18) Bird interaction</u>	This information is used by Department scientists to evaluate impacts of fishing practices with wildlife.
<u>(21) Hours and minutes fished</u>	This information allows Department scientists to evaluate fishing effort and catch rates for use in fisheries management.
<u>(22) Block where most fish caught</u>	This information allows Department scientists to evaluate the species distribution. Along with catch and effort information, it is used to determine the extent of various fisheries as mandated by law. This information is also used in producing estimates for fisheries management and determining impact of area restrictions.
<u>(23) Depth (feet)</u> <u>(24) Sea surface temperature (°F)</u>	This information is used by Department scientists to determine depth where species are being caught and the environmental factors, specifically water temperature that may be influencing fish species distribution. For fisheries management purposes, these data may also aid in determining mortality rates for released fish and determining the impacts of depth restrictions.
<u>(25) Number of fishers: the number of fishers who will fish, including crew members, shall be recorded prior to departure of any trip</u>	This information is used by law enforcement officers to determine compliance with individual bag limits and boat limits, and by Department scientists in producing estimates of catch rates, effort and total catch for fisheries management.
<u>(26) Number of crew</u>	See above.

Field name	Necessity and Justification
<u>who fished</u> <u>(27) Number of fish caught by crew</u>	
<u>(28) Number of crab traps (only when crab fishing north of Point Arguello, Santa Barbara County)*</u>	*Proposed field: This field is necessary to provide CPFV gear effort during each fishing trip to the Department, data which are currently lacking and are not readily supplied by CPFV customers. This change would increase the quality and quantity of data to inform fishery management and entanglement risk.
<u>(29) Number of hoop nets (only when crab fishing north of Point Arguello, Santa Barbara County)*</u>	*Proposed field: see above.

Subsection (c)

This subsection is renumbered with no changes to text.

Subsection (d)

This subsection is being renumbered and clarifies that CPFV records also need to be complete as well as accurate. A new statement is added to reference that the data fields in subsection (b) need to be in compliance with the newly renumbered subsection (c).

Subsections (e)-(h)

These subsections are renumbered with no changes to text except that subsection (f) includes a non-substantive edit to update a referenced subsection.

Amend Subsection 701(i)

This subsection will be added to include the new fee assessed for the CPFV Crab Trap Validation to cover its administrative cost. The fee is proposed to be \$17.75, see STD 399 for the fee determination calculation. This fee amount is subject to annual adjustments pursuant to Section 713. The next subsection (i) will be renumbered to (j).

(b) Goals and Benefits of the Regulation

Pursuant to FGC Section 7050, it is the state's policy, among others, to "[c]onserve the health and diversity of marine ecosystems and marine living resources" and to "[a]llow and encourage only those activities and uses of marine living resources that are sustainable." The proposed regulations would clarify and improve enforceability of current regulations for hoop nets. Regulations support a petition request that also improves data collection efforts to inform fishery management. The proposal better aligns management of the recreational sector with the commercial fishery in mitigating entanglement risk of marine animals protected by the federal Endangered Species Act and Marine Mammal Protection Act. Lastly, the proposal parallels U.S. West Coast fishery efforts to uniquely mark gear by ensuring these marks are prohibited in California recreational crustacean gear.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Section 29.80

Authority: Sections 200, 205, 7075 and 7078, Fish and Game Code.

Reference: Sections 200, 205, 265, 270, 275, 713, 1050, 1053.1, 1055.1, 7050, 7055, 7056, 7058, 7060, 7120, 7149.8, 7850, 7923, 7924, 8022, 8026 and 8587.1, Fish and Game Code.

Section 29.85

Authority: Sections 200, 205, 265 and 275, Fish and Game Code.

Reference: Sections 200, 205, 265 and 275, Fish and Game Code.

Section 195

Authority: Sections 7071, 7920, 7923, 7924, 8026 and 8587.1, Fish and Game Code.

Reference: Sections 7055, 7056, 7058, 7060, 7120, 7850, 7923, 7924, 8026 and 8587.1, Fish and Game Code.

Section 701

Authority: Sections 200, 205, 265, 275, 713, 1050, 1053.1 and 7149.8, Fish and Game Code.

Reference: Sections 200, 205, 265, 275, 713, 1050, 1053.1, 1055.1 and 7149.8, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change

Under subsection 29.80(b), a main buoy would have a maximum defined size of 6 inches in diameter and 14 inches in length while an optional marker buoy, if utilized, would need to be yellow in color also with a maximum defined size of 6 inches in diameter and 14 inches in length and attached to the main buoy no more than 3 feet away.

(e) Identification of Reports or Documents Supporting Regulation Change

- California Department of Fish and Wildlife. 2020. State of California, Department of Fish and Wildlife, Amended Initial Statement of Reasons for Regulatory Action (Pre-publication of Notice Statement). Add Section 132.8, Title 14, California Code of Regulations Re: Risk Assessment Mitigation Program: Commercial Dungeness Crab Fishery. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=180697>
- California Department of Fish and Wildlife. 2023. Dungeness Crab, *Metacarcinus magister*, Enhanced Status Report. Available from <https://marinespecies.wildlife.ca.gov/dungeness-crab/>
- California Department of Fish and Wildlife. 2024. Initial Statement of Reasons for Regulatory Action to Amend Section 132.8, Title 14, California Code of Regulations, Risk Assessment Mitigation Program: 2024 Program Revisions for the Commercial Dungeness Crab Fishery. Available from <https://wildlife.ca.gov/Notices/Regulations/RAMP2024>
- California Fish and Game Commission. 2013. State of California, Fish and Game Commission, Initial Statement of Reasons for Regulatory Action. Amend Sections 190 and

195, Title 14, California Code of Regulations Re: Fishing Activity Records, and Report of Fish Taken To Be Made by Owner of Barge or Vessel for Hire and Boat Limits.

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=231152&inline>

- California Fish and Game Commission. 2020. State of California, Fish and Game Commission, Initial Statement of Reasons for Regulatory Action. Amend Sections 29.80, 29.85, and 701, Title 14, California Code of Regulations Re: Recreational Crab Trap Fishery Marine Life Protection Measures.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=183155&inline>
- California Fish and Game Commission. June 2023. Regulation Change Petitions (Marine) – Petitions 2022-11 and 2022-17 and Department Memo.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213197&inline>
- NOAA Fisheries. 2020. 2019 West Coast Whale Entanglement Summary. Available from https://www.fisheries.noaa.gov/s3//dam-migration/wcr-nmfs_2019_entanglement_report_final-508_5-11-2020_rev.pdf
- Saez L, Lawson D, DeAngelis M. 2021. Large whale entanglements off the U.S. West Coast, from 1982-2017. National Oceanic and Atmospheric Administration Technical Memorandum NMFS-OPR-63A. 50 p. <https://www.fisheries.noaa.gov/s3//2021-03/tm-opr-63a-final-031921.pdf?VersionId=null>

(f) Public Discussions of Proposed Regulations Prior to Notice Publication

- July 18, 2024: Commission Marine Resources Committee meeting - Santa Rosa.
- September 20, 2024: Public webinar to discuss proposed regulation changes.
- October 3, 2024: Working Group annual meeting - Santa Rosa, Webinar.
- October 29-30, 2024: Dungeness crab task force meeting - Santa Rosa.
- November 7, 2024: Commission Marine Resources Committee meeting - Sacramento.

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change

During the outreach period, alternatives to the regulation change were discussed. No other alternatives were identified or brought to the attention of Department staff that would have the same desired regulatory effect. The alternatives discussed are the following:

Alternative 1:

Consider adding hoop nets to the recreational entanglement evaluation process. Members of the public were not supportive of this change since the two-hour service interval already precludes long soak periods to reduce entanglement risk by the use of this gear. Hoop net gear has not been positively identified in any known confirmed entanglements.

Alternative 2:

Consider adding a gear reduction to the available management actions as part of the recreational entanglement evaluation process. Upon further discussions with recreational fishery constituents, this may not be an effective tool for reducing overall gear by the

recreational sector since traps may be shared among users (subsection 29.80(c)(6)(A)).

Alternative 3:

Only allow a main buoy with no optional marker buoy. During discussions with recreational fishery constituents, they stated the necessity for an additional buoy on the hoop net was due to removing the hoop net within the service interval period by the conclusion of a fishing trip. An additional buoy compensates for the effect of strong ocean currents pulling surface gear below the water line.

Alternative 4:

Consider allowing up to 6 feet of surface line between the main buoy and marker buoy of hoop nets. Although hoop nets have not been attributed to entanglements, minimizing surface lines will also minimize risk of entanglements especially as this gear is allowed to be used when marine life concentration triggers are met resulting in a trap prohibition. By limiting surface line to be similar to what is required for crab traps can allow for the use of an additional buoy on the hoop net.

(b) No Change Alternative

Without change, hoop net surface gear may continue to use the same buoys as required on crab traps while tampering of another person's hoop nets would not be explicitly prohibited. In addition, the recreational entanglement evaluation would continue to assess entanglement risk solely based on triggers for marine life concentrations of protected species. The management actions available to the Director during periods of elevated risk would be limited to a fleet advisory or a crab trap prohibition with no intermediary action. The crab trap validation would be required for all users of crab traps regardless of fishing mode. Uniquely marked lines either could be purchased and used in the rigging of lines for recreational crab traps and hoop nets and misidentified as other fishing gear in confirmed U.S. West Coast entanglements.

(c) Description of Reasonable Alternatives that Would Lessen Adverse Impact on Small Business

None.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The proposed action will not have a significant statewide adverse economic impact directly affecting business including the ability of California businesses to compete with businesses in other states because the proposed regulations are for a recreational marine fishery. CPFVs

that take fishers on crab fishing trips using crab traps as a fleet will now be required to purchase a CPFV-specific validation at \$1,115.08 every 365 days [$\$18.28 \times 61$ vessels], while also indicating on their fishing logbooks the number of traps or hoop nets used per daily fishing trip in addition to the information they are already required to provide. There may be unrealized cost savings for serving customers on crab trap fishing trips since they are no longer required to purchase a trap validation. CPFVs also may need to purchase an additional buoy for any hoop nets deployed if they choose to use this for their operations, but it is not required. An optional yellow marker buoy could average \$15.00 that if utilized, would be placed theoretically on up to 25 hoop nets (no hoop net limits), resulting in industry costs of approximately \$30,214.06 [(((\$375 to add up to 25 buoys due to damage or loss, or $\$15.00 \times 25$ hoop net buoys) + (\$120.31 in labor costs, or $\$19.25/\text{hour} \times 0.25 \text{ hours/hoop net} \times 25 \text{ hoop nets per CPFV}$)) $\times 61$ CPFVs] in initial costs.

The expected annual replacement cost for buoys in subsequent years to replace lost or damaged buoys (assuming an annual gear loss rate of 20% resulting in 10 buoys needing to be replaced annually) is approximately \$10,618 [(((\$150 to replace up to 10 buoys due to damage or loss, or $\$15.00 \times 10$ hoop net buoys) + (\$24.06 in labor costs, or $\$19.25/\text{hour} \times 0.25 \text{ hours/hoop net} \times 5 \text{ hoop nets per CPFV}$)) $\times 61$ CPFVs]. The total economic impact of buoy costs and CPFV validation costs to CPFVs is approximately \$11,733 annually.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The Commission does not anticipate any impacts on the creation or elimination of jobs, the creation of new business, the elimination of existing businesses or the expansion of businesses in California because the proposed regulations are not anticipated to affect the volume of recreational crabbing nor result in significant costs to CPFVs that serve recreational crab trappers.

The Commission does not anticipate any benefits to the health and welfare of California residents or to worker safety.

The Commission anticipates benefits to the state's environment by reducing potential for marine life entanglement risk. The approximate value of each prevented whale entanglement is \$2,530,945 per whale, see Section C. Estimated Benefits in the addendum to the STD 399.

(c) Cost Impacts on a Representative Private Person or Business

Recreational crab fishers who solely use crab traps from CPFVs would no longer be required to purchase a Crab Trap Validation. However, CPFVs would be required to purchase a CPFV-specific validation [$\$18.28$ per validation (includes $\$17.75$ fee plus $\$0.53$ surcharge) \times approximately 61 vessels] that will be good for 365 days and could cover a recreational Dungeness crab season that spans two calendar years depending on time of purchase. Additionally, CPFVs that opt to use an additional buoy may realize additional costs of \$75 a year if a buoy averages \$15.00 and they replace about 10 hoop net buoys annually, plus the labor cost of approximately \$24 for installing the buoys [$\$24.06$ in labor costs, or $\$19.25/\text{hr} \times$

0.25 hours/hoop net x 5 hoop nets per CPFV]. The total cost of the validation fee and buoy costs per CPFV is approximately \$194.

Northern hoop net users who opt to use an additional buoy may realize initial costs of around \$75 if a buoy averages \$15.00 and they use about 5 hoop nets (no hoop net limits) that would require an additional buoy, and ongoing costs of \$75 in subsequent years to replace lost or damaged buoys.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State

The proposed regulations are anticipated to introduce some start-up and ongoing implementation and enforcement costs that may be partially recovered with the CPFV-specific validation. An estimated \$1,115.08 in CPFV-specific validation revenue is anticipated to be collected by the Department annually. However, removing 1,615 fishers from the requirement to purchase a recreational crab trap validation by fishing from a CPFV would result in a \$4,570.45 loss in revenue for the Department, with a total net decrease of \$3,455.37 in revenue for the Department. The Commission does not anticipate any savings to State agencies or cost/savings in federal funding to the State.

(e) Nondiscretionary Costs/Savings to Local Agencies

None.

(f) Programs Mandated on Local Agencies or School Districts

None.

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code

None.

(h) Effect on Housing Costs

None.

VII. Economic Impact Assessment

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The Commission does not anticipate impacts on the creation or elimination of jobs within the state because the proposed regulations are for a recreational marine fishery. The additional costs for CPFVs to purchase a CPFV-specific validation and marker buoys for hoop nets is not anticipated to result in the creation or elimination of jobs because these costs are a very small share of CPFV operating costs and would not change procedures so as to require more or less labor (up to \$194 per CPFV annually).

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The Commission does not anticipate any new businesses, or elimination of existing

businesses, because the proposed regulation is not likely to substantially increase or decrease recreational fishing activity within the state. The additional costs for CPFVs purchase a CPFV-specific validation and marker buoys for hoop nets is not anticipated to result in the creation or elimination of businesses because costs are a very small share of CPFV operating costs, and the supply of buoys is already sufficient to fulfill this requirement.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The Commission does not anticipate any effects on the expansion of businesses currently doing business in the State. The number of fishing days to use a crab trap during a Dungeness crab season may increase during periods of elevated risk when a depth constraint may be declared by the Director but this effect would not substantially increase or decrease recreational fishing activity within the State since many CPFVs have already switched gear types to use hoop nets during crab trap prohibitions.

The additional costs for CPFVs to purchase a CPFV-specific validation and marker buoys for hoop nets is not anticipated to result in the expansion of businesses because costs are a very small share of CPFV operating costs, and the supply of buoys is already sufficient to fulfill this requirement.

(d) Benefits of the Regulation to the Health and Welfare of California Residents

Fishing is an outdoor activity that can provide several health and welfare benefits to California residents. Fishers and their families benefit from fresh fish to eat and from the benefits of outdoor recreation, including exercise. People who fish have a special connection with the outdoors and an awareness of the relationships between wildlife, habitat, and humans, and can be a family tradition and a bonding activity. As set forth in Fish and Game Code section 1700, it is the policy of the state to encourage the conservation, maintenance, and utilization of fish and wildlife resources for the benefit of all the citizens of the state. The objectives of this policy include, but are not limited to, the maintenance of populations of sport fish species to ensure their continued existence and supporting recreational opportunity. The fees that fishers pay for licenses and tags help fund wildlife conservation.

(e) Benefits of the Regulation to Worker Safety

The Commission does not anticipate any benefits to worker safety because the proposed regulation does not affect existing working conditions.

(f) Benefits of the Regulation to the State's Environment

The regulation is anticipated to benefit the State's environment by reducing the potential for entanglements marine life species protected by the Endangered Species Act in fishing gear. Using existing literature about the ecosystem valuation of a whale's life as well as the value of whales to California's whale watching industry yields a benefit of \$2,530,945 per whale that avoids entanglement, see the addendum to the STD 399 for more information.

(g) Other Benefits of the Regulation

None.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The Fish and Game Commission (Commission) proposes to amend sections 29.80, 29.85, 195, and 701, Title 14, California Code of Regulations (CCR).

Background

Current regulations for the recreational Dungeness crab fishery specify seasons, size limits, bag and possession limits, closed fishing areas, and gear restrictions. Crabs can also be taken recreationally by hand, crab trap, crab loop trap (snare), or hoop net. Hoop nets may be used year-round for taking of crustaceans and have a service interval of two hours (subsection 29.80(b)(2)) and considered abandoned if left out longer than two hours (subsection 29.80(b)(3)). Current regulations do not limit the number, size or color of buoys used on hoop net gear. Hoop nets (not used from shore) must have a surface buoy that is marked to indicate specific operator either by an individual's GO ID, Commercial Passenger Fishing Vessel's (CPFV's) vessel commercial boat registration number, or guide license's identification number (subsection 29.80(b)(5)). There is no limit on the number of hoop nets that may be operated by an individual or CPFV when used north of Point Arguello, Santa Barbara County (subsection 29.80(b)(4)(B)).

CPFVs take customers on fishing trips and provide fishing gear, either with hoop nets or crab traps. Customers are required to have the proper licenses on board including a crab trap validation when CPFV's use traps. The owner and operator of a CPFV is required to keep and submit a complete and accurate record of fishing activities on a logbook (subsections 190(a) and 190(b)).

Recreational crab traps are evaluated for marine life entanglement risk during the Dungeness crab season under a marine life concentration trigger (subsection 29.80(c)(7)(A)). Under the recreational evaluation when marine life concentration triggers are met, the Director may declare a management action by RAMP Fishing Zone (subsection 29.80(c)(7)(C)). The only management actions the Director can implement are the following: a fleet advisory to employ voluntary practices, a trap prohibition at the start or end of the recreational Dungeness crab season or lifting of any trap prohibition (subsection 29.80(c)(7)(B)). This recreational entanglement evaluation regulatory framework also references definitions and management triggers described in the RAMP regulation (Section 132.8) for the commercial Dungeness crab fishery.

Proposed Changes

The proposed changes focus on updates to recreational crab gear restrictions to update use of hoop nets, provide additional tools to address entanglement risk of recreational crab traps, and prohibit unique line marks required in other fisheries from being used in recreational gear. They also address a regulations change petition (#2022-11) requesting the establishment of a CPFV validation so that CPFV customers would no longer be required to have a trap validation.

This is the summary of proposed regulations to recreational crab gear:

- **Add a hoop net tampering prohibition:** The proposed regulation would prevent unlawful tampering of hoop nets. (Proposed subsection 29.80(a)(3)(B)).
- **Prohibit the use of other West Coast fisheries' unique line marks/colors on hoop net and crab trap gear:** The proposed regulation would prohibit recreational gear for take of crustaceans from using another fishery's unique line marking. (Proposed subsection 29.80(a)(4)).
- **Clarify surface gear requirements for northern hoop nets:** The proposed regulation would standardize surface gear configurations of hoop nets used north of Point Arguello, Santa Barbara County. (Proposed subsection 29.80(b)(5)).
- **Update the marine life entanglement evaluation process:** The proposed regulation would add a trigger for confirmed entanglements of any protected species referenced in RAMP as well as a depth constraint under the available management actions (Proposed subsections 29.80(c)(7)(A), 29.80(c)(7)(B), and 29.80(c)(7)(D)).
- **Add a separate CPFV crab trap validation:** The proposed regulation would modify the current trap validation, creating a separate CPFV validation. In addition, new fields will be added to the CPFV logbook and a new fee for the CPFV validation. (Proposed subsections 29.85(a), 195(a), 195(b), 195(d), 701(i), and 701(j)).

The proposed regulatory package also includes clarifying and non-substantive edits to Section 29.80.

Benefits of the Regulations

The proposed regulations would clarify and improve enforceability of current regulations for hoop nets. Regulations support a petition request that also improves data collection efforts to inform fishery management. The proposal better aligns management of the recreational sector with the commercial fishery in mitigating entanglement risk of marine animals protected by the federal Endangered Species Act and Marine Mammal Protection Act. Lastly, the proposal parallels U.S. West Coast efforts to require uniquely marked gear by ensuring these marks are prohibited in California recreational crustacean gear.

Consistency and Compatibility with Existing Regulations

The proposed regulations are neither inconsistent nor incompatible with existing state regulations. Section 20, Article IV, of the state Constitution specifies that the Legislature may delegate to the Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to adopt regulations governing recreational fishing regulations (Fish and Game Code sections 200, 205, 315, and 316.5). No other state agency has the authority to adopt regulations governing recreational fishing regulations. The Commission has reviewed its own regulations and finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulations. The Commission has searched the CCR for any regulations regarding the adoption of recreational crab fishing regulations; therefore, the Commission has concluded that

the proposed regulations are neither inconsistent nor incompatible with existing state regulations.

Proposed Regulatory Language

Section 29.80, Title 14 CCR, is amended to read:

§29.80. Gear Restrictions for Recreational Take of Saltwater Crustaceans.

(a) General Provisions.

- (1) Saltwater crustaceans may be taken by hand.
- (2) Nets, traps or other appliances may not be used except as provided in this Section.

(3) Tampering Prohibition

(A) It is unlawful to disturb, move, or damage any trap; or remove any saltwater crustacean from a trap, that belongs to another person without written permission including permission transmitted electronically, in possession from the operator of the trap. Any person with written permission from the operator of a crab trap will be in compliance with subsection (c)(3)(A)1. if the written permission contains the operator's GO ID number that matches the GO ID number on the buoy of the crab trap being fished.

(B) Notwithstanding subsection (b)(5)(B), it is unlawful to disturb, move or damage any hoop net that belongs to another person. When on a vessel, hoop nets may be used by another person as long as the owner or operator of that hoop net is present, and if at least one person's GO ID number matches the GO ID number on the main buoy of the hoop net being fished. This subsection does not allow any person or any vessel to exceed the hoop net limits described in subsection (b)(4).

(4) It is unlawful to mark lines or use colored lines that are required in any other state or federal fishery operating in the U.S. West Coast Economic Exclusive Zone or in state waters of California, Oregon or Washington.

(b) Hoop nets. Hoop nets may be used to take spiny lobsters and all species of crabs.

(1) Hoop Net Defined: Only Type A and Type B hoop nets, as ~~describe~~ described below, are allowed for use:

(A) Type A: Fishing gear that is comprised of one to three rigid ring(s), with each ring measuring no greater than 36 inches in inside diameter nor less than 10 inches in inside diameter, which is/are connected to non-metallic soft mesh thereby forming a circular-shaped net with an enclosed bottom and with the following specifications:

1. Lift lines shall be attached only to the top ring;
2. A second and third rigid ring(s) may be connected by non-metallic soft mesh to the top ring; however, each ring must be equal in size to or smaller than the ring above it;
3. When the net is being raised, the top ring shall be above and parallel to

all other rings, with the enclosed bottom portion of the non-metallic soft mesh even with or hanging below all other rings;

4. All parts of the hoop net shall collapse and lie flat when resting on the ocean floor in such a manner that the gear does not entrap or restrict the free movement of crustaceans until lifted;

5. When suspended from lift lines, the entire hoop net shall measure no taller than 36 inches; and

6. The ring material shall not be thicker than one inch in any dimension.

(B) Type B: Fishing gear that is comprised of only two rigid rings (not including the bait ring), with the bottom ring measuring no greater than 36 inches in inside diameter and the top ring measuring no less than 15 inches in inside diameter and with the following specifications:

1. The top ring shall be connected to the bottom ring and supported by no more than six rigid straight support arms, and the assembled frame shall measure no more than 10 inches tall;

2. The rings and support material shall not be thicker than one inch in any dimension;

3. All rings shall be connected by non-metallic soft mesh, thereby forming a net with an enclosed bottom;

4. Lift lines shall be attached only to the top ring;

5. When suspended from lift lines, the enclosed bottom portion of the net shall be even with or hanging below the bottom ring, and the entire net shall measure no taller than 30 inches;

6. It is unlawful to have any entrances below the top ring; and

7. A bait ring may be used if it is attached to the bottom half of the net and it is not attached to any part of the rigid frame.

(2) The owner or operator of a hoop net shall raise the hoop net to the surface and inspect the contents of the hoop net at intervals not to exceed 2 hours.

(3) It is unlawful to abandon or leave unchecked a hoop net for more than 2 hours. Any hoop net left unchecked for more than 2 hours shall be considered abandoned and may be seized by any person authorized to enforce these regulations.

(4) Limits: Except for the limit of two hoop nets when taking crabs from a public pier under subsection 28.65(b), the following limits apply when taking spiny lobster or crab.

(A) Between Point Arguello, Santa Barbara County, and the United States-Mexico border, not more than five hoop nets shall be possessed or deployed by a person, unless when two or more persons are on a vessel, in which case not more than 10 hoop nets may be possessed or deployed from such vessel.

(B) North of Point Arguello to the California-Oregon border, there is no limit on the number of hoop nets that may be possessed or deployed.

(5) Hoop Net Identification Requirements: All hoop nets shall be marked with a surface buoy, except for those hoop nets deployed by persons on shore or manmade structures connected to the shore. North of Point Arguello to the California-Oregon border, hoop nets must have at least one main surface buoy that is no more than 6 inches in diameter and no more than 14 inches in length and may have one additional marker buoy that is yellow, that is no more than 6 inches in diameter and no more than 14 inches in length, and is attached no more than 3 feet from the main buoy.

(A) The main surface buoy of hoop nets deployed from commercial passenger fishing vessels shall be legibly marked to identify the commercial boat registration number of the vessel.

(B) The main surface buoy of hoop nets provided by a licensed guide to clients for use on guided trips shall be legibly marked to identify the guide license number of the accompanying guide.

(C) In all other cases, the main surface buoy of any deployed hoop net shall be legibly marked with the operator's GO ID number, or the GO ID number of at least one operator if there are multiple operators.

(6) Hoop nets shall not be deployed and used in ocean waters south of Point Arguello, Santa Barbara County, during the 24-hour period prior to the opening of the recreational spiny lobster season.

(c) Crab traps:

(1) Crab traps shall have at least two rigid circular openings of not less than four and one-quarter inches inside diameter so constructed that the lowest portion of each opening is no lower than five inches from the top of the trap.

(2) Crab traps shall contain at least one destruct device of a single strand of untreated cotton twine size No. 120 or less that creates an unobstructed escape opening in the top or upper half of the trap of at least five inches in diameter when the destruct attachment material corrodes or fails.

(3) Trap Gear Identification: Every crab trap shall be marked with only a main buoy and a marker buoy, except as noted under subsection 29.80(c)(3)(C) below.

(A) A main buoy is a surface buoy that is at least 5 inches in diameter and 11 inches in length.

1. The main buoy for traps deployed by an individual shall be legibly marked with the operator's assigned GO ID number.

2. The main buoy for traps deployed from a commercial passenger fishing vessel shall be legibly marked to identify the commercial boat registration number of that vessel.

(B) A marker buoy is a red buoy 3 inches in diameter and 5 inches in length attached no more than 3 feet from the main buoy.

(C) In addition to marking the buoy pursuant to subsection (c)(3)(A)2., traps deployed by commercial passenger fishing vessels shall be legibly marked to identify the commercial boat registration number of the vessel.

(4) Crab traps shall not be deployed and used in ocean waters seven days prior to the opening of the Dungeness crab season.

(5) Every crab trap shall be raised, cleaned, and emptied (serviced) at intervals not to exceed 9 days, weather conditions at sea permitting, and no crab trap shall be abandoned in the waters of this state.

(6) Trap Limits:

(A) An individual shall not operate more than 10 deployed traps, except an individual may service up to 10 additional traps if the individual has in possession written permission from the operator(s) of the additional traps whose gear are identified in accordance with subsection (c)(3)(A)1.

(B) A commercial passenger fishing vessel shall not deploy more than 60 traps per vessel.

(7) Starting at least 5 days in advance of the opening of the recreational Dungeness crab fishing season pursuant to Section 29.85, the director shall, on at least a monthly basis until the season opens statewide and March 1 through June 15, evaluate and respond to risk of humpback whales, blue whales, and/or Pacific leatherback sea turtle entanglement with recreational crab fishing gear as follows:

(A) The director shall evaluate entanglement risk based on marine life concentrations as defined in subsection 132.8(a)(408), Title 14, CCR, and confirmed entanglements in California Dungeness crab gear as defined in subsection 132.8(a)(4). This evaluation will be consistent with the acceptable data and numerical triggers outlined in ~~subsection~~ subsections 132.8(c)(1)-(2).

1. ~~If data are available, and marine life concentrations meet the numerical triggers for any species as specified in subsection 132.8(c)(2)(A)4. (in the fall) or 132.8(c)(2)(B) (in the spring), the director shall take action pursuant to subsection 29.80(c)(7)(B) below.~~ the director shall take action pursuant to subsection 29.80(c)(7)(B) when either of the following conditions are met:

a. Marine life concentrations meet the numerical triggers for any species as specified in subsection 132.8(c)(2)(A)4. or 132.8(c)(2)(B); or

b. Confirmed entanglements in California Dungeness crab gear meets the numerical triggers for any species as specified in subsection 132.8(c)(1).

2. If data are unavailable prior to the recreational Dungeness crab season opener, the director shall take action pursuant to subsection 29.80(c)(7)(B) below until data are available, at which point subsection 29.80(c)(7)(A)1. shall apply.

(B) If required under subsection 29.80(c)(7)(A) above, the director after consulting with the president of the commission or the president's designee, shall implement one or more of the following recreational management actions that the director demonstrates protects humpback whales, blue whales, and/or Pacific leatherback sea turtles based on best available science. Recreational management action shall be determined based on consideration of information outlined in subsection 132.8(d):

1. Advisory notice to recreational crab fishers to employ voluntary efforts and/or measures to reduce the risk of entanglements (e.g., best fishing practices).
2. Recreational Dungeness crab season delay and continuation of the crab trap prohibition specified in subsection 29.80(c)(4), whereby the director shall prohibit the deployment and use of recreational crab traps until new data indicates the numerical triggers for any species as specified in ~~subsection~~ subsections 132.8(c)(1) or 132.8(c)(2)(A)4. ~~(in the fall)~~ are no longer met, at which point the director shall lift or modify the Dungeness crab season delay as appropriate.
3. Season closure, whereby the director shall prohibit the deployment and use of recreational crab traps until new data indicates the numerical triggers for any species as specified in ~~subsection~~ subsections 132.8(c)(1) or 132.8(c)(2)(B) (in the spring) are no longer met, or the normal end of the Dungeness crab season specified in subsection 29.85(b)(2), at which point the director shall lift or modify the closure as appropriate.
4. Depth Constraint: The Director may use a depth constraint for crab traps during the Dungeness crab season where Dungeness crab may not be taken or possessed in waters within a specific depth range. "Depth" is defined by approximating a particular depth contour by connecting the appropriate set of waypoints adopted in Federal regulations and published in Title 50, Code of Federal Regulations Part 660, Section 660.71 (Revised March 1, 2023), 660.72 (Revised December 1, 2023), and 660.73 (Revised December 1, 2023), incorporated by reference herein.

(C) Recreational management action may be implemented statewide or by fishing zone(s) (as defined in subsections 132.8(a)(7)(A)-(G)), if the director demonstrates less-than-statewide action protects humpback whales, blue whales, and/or Pacific leatherback sea turtles based on best available science.

(D) Notice of a delay, ~~or closure,~~ or other management action pursuant to subsection 29.80(c)(7)(B)2., ~~or 3, or 4.~~ shall be transmitted via a director's

declaration. The declaration will describe the following:

1. Data supporting the entanglement risk evaluation pursuant to subsection 29.80(c)(7)(A).
2. Relevant information informing management considerations from subsection 132.8(d).
3. Rationale for nexus between management considerations in subsection 132.8(d) and chosen recreational management action under subsection 29.80(c)(7)(B).
4. Duration of management action.

(E) The director's declaration pursuant to subsection 29.80(c)(7)(D) shall provide a minimum of 5 days' notice before the delay or closure becomes effective.

(F) The director's declaration and/or any advisory notice shall be communicated via the department's "Whale Safe Fisheries" webpage located at <https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries>. At its discretion, the department may communicate declarations and/or advisory notices via additional formats.

(G) After the director implements a management action pursuant to subsection 29.80(c)(7)(B), he or she shall notify the commission and request that the commission schedule a public discussion of the management action at its next regularly-scheduled commission meeting.

...

[No changes to subsections (d)-(j)]

...

NOTE: Authority cited: Sections 200, 205, 399, 7075 and 7078, Fish and Game Code.
Reference: Sections 200, 205, 270, 275, 7050, 7055 and 7056, Fish and Game Code.

Section 29.85, Title 14 CCR, is amended to read:

§29.85. Crabs.

(a) Crab Trap Validations.

(1) Any individual who fishes for crabs using crab trap(s) pursuant to subsection 29.80(c), except from a Commercial Passenger Fishing Vessel, shall have in possession a valid Recreational Crab Trap Validation (Section 701, Title 14, CCR).

(2) A Commercial Passenger Fishing Vessel operator that fishes for crabs using crab traps shall have in possession a valid Commercial Passenger Fishing Vessel Crab Trap Validation (Section 701, Title 14, CCR).

...

[No changes to subsections (b)-(e)]

...

NOTE: Authority cited: Sections 200, 205, 265 and 275, Fish and Game Code. Reference: Sections 200, 205, 265 and 275, Fish and Game Code.

Section 195, Title 14 CCR, is amended to read:

§195. Report of Fish Taken To Be Made by Owner of Barge of Vessel for Hire, and Boat Limits.

(a) Pursuant to Section 190 the owner/operator of a commercial passenger fishing vessel shall keep a logbook of fishing activities.

(1) A separate log for each trip during a calendar day shall be completed.

(2) A separate log for each calendar day of a multi-day trip shall be completed.

~~(1) The form entitled Commercial Passenger Fishing Vessel Log, Central and Northern California, DFW 195A (Rev 01/16), incorporated by reference herein, shall be used when the vessel is engaged in fishing north of Point Conception.~~

~~(2) The form entitled Commercial Passenger Fishing Vessel Log, Southern California, DFW 195B (Rev 01/16), incorporated by reference herein, shall be used when the vessel is engaged in fishing south of Point Conception.~~

(b) Logbooks for Commercial Passenger Fishing Vessels contain the following fields and instructions:

(1) Log date; date shall be recorded prior to departure of any trip;

(2) Vessel name; name shall be recorded prior to departure of any trip;

(3) Vessel ID Number; number shall be recorded prior to departure of any trip;

(4) Port of landing; port shall be recorded prior to departure of any trip;

(5) Port code; code shall be recorded prior to departure of any trip;

(6) Operator's name; name shall be recorded prior to departure of any trip;

(7) Operator's signature;

(8) No fishing activity for the month of; for months when no fishing activity occurred for the entire month, a log shall be completed on the last day of the month and the month written in the box indicating no fishing activity occurred for the entire month;

(9) Trip type;

(10) Target species;

(11) Fishing method;

(12) Bait;

(13) Species;

(14) Number kept;

(15) Number thrown back;

(16) Lost to sea lions;

(17) Descending device;

(18) Bird interaction;

(19) Departure time;

(20) Return time;

(21) Hours and minutes fished;

(22) Block where most fish caught;

(23) Depth (feet);

(24) Sea surface temperature (°F);

(25) Number of fishers; the number of fishers who will fish, including crew members, shall be recorded prior to departure of any trip;

(26) Number of crew who fished;

(27) Number of fish caught by crew;

(28) Number of crab traps (only when crab fishing north of Point Arguello, Santa Barbara County);

(29) Number of hoop nets (only when crab fishing north of Point Arguello, Santa Barbara County).

(bc) The owner(s) and/or operator(s) of each vessel required to obtain a license under Section 7920 of the Fish and Game Code shall post a notice in a prominent place on the vessel giving information to fishermen on license requirements, bag limits, and other pertinent information. This notice shall be furnished by the department.

(ed) Both the vessel owner(s) and/or operator(s) shall be responsible for keeping complete and accurate records and insuring the vessel is in compliance with subsections (a) and (b) above. All of the fields and requirements listed in subsection (b) above shall be completed pursuant to section 190(c).

(de) All fishing activity records are confidential pursuant to Fish and Game Code Sections 7923 and 8022 and Government Code Sections 6276 and 6276.10.

(ef) Boat Limits: When two or more persons licensed or otherwise authorized to sport fish in ocean waters off California or in the San Francisco Bay District, as defined in Section 27.00, are angling for finfish in these waters aboard a vessel licensed under Section 7920, fishing by these persons (to include vessel operator(s) and crew members where licensed to sportfish under their own individual limits) may continue until the passenger's boat limits of those finfish are taken and possessed aboard the vessel as authorized under this section.

(1) For purposes of this section, the vessel operator(s) and crew members are not passengers and may not take fish towards obtaining boat limits for passengers except for casting, setting trolling gear, gaffing or netting fish, but may take fish during a fishing trip for their personal use only. Vessel operator(s) and crew members may assist passengers in other activities

including, but not limited to, obtaining bait, chumming, baiting and untangling hooks and lines, identifying, dispatching, filleting, counting, bagging and otherwise handling fish taken by passengers. Upon completion of a fishing trip, the vessel operator(s) and crew members may only possess fish that are part of their own personal bag limit not to exceed authorized sportfishing daily bag and possession limits.

(2) Fish taken by operator(s) and crew members for personal use pursuant to (ef)(1) above must be separated from fish taken under a boat limit and labeled in a manner that they can be identified as an individual operator's or crew member's fish. Operator(s) and crew members are also prohibited from giving all or part of their individual limit to any passenger during or after a trip.

(3) The authorization for boat limits aboard a vessel does not apply to fishing trips originating in California where fish are taken in other jurisdictions.

(4) A boat limit for a species or species group is equal to the number of passengers aboard the vessel that are licensed or otherwise authorized to sport fish in ocean waters off California or in the San Francisco Bay District multiplied by the individual daily bag limit authorized for a species or species group. For purposes of this section, the number of passengers shall not include the vessel operator(s) and crew members. It is unlawful to exceed the boat limit at any time.

(5) Prior to the departure on a fishing trip of a vessel that is licensed under Fish and Game Code Section 7920, the number of fishers, to include passengers, guests, operators and crew who will be fishing, shall be recorded under "number of fishers" on the logbook for that trip. In addition, the number of vessel operator(s) and crew members who will fish for that trip shall be recorded in the space to the right of the operator's signature on the logbook.

(6) Upon completion of a sport fishing trip aboard a vessel reporting under this section, each licensed or otherwise authorized angler may not possess more than the daily bag and possession limits. For the purposes of this section, a fishing trip is completed at the time a person disembarks from the vessel and individual possession limits apply.

(7) Species for which no daily bag limit exists are not included in the boat limit.

(fg) Where boat limits are provided for in this section, the vessel operator(s) and crew members may be cited for violations occurring aboard the vessel, including but not limited to violations of the following:

- (1) Overlimits
- (2) Possession of prohibited species
- (3) Minimum size limits
- (4) Fish taken out of season or in closed areas

(gh) Boat limits are not authorized for sturgeon fishing and shall not apply to the take, possession or retention of sturgeon.

NOTE: Authority cited: Sections 7071, 7920, 7923, 7924, 8026 and 8587.1, Fish and Game

Code. Reference: Sections 7055, 7056, 7058, 7060, 7120, 7850, 7923, 7924, 8026 and 8587.1, Fish and Game Code

Section 701, Title 14 CCR, is amended to read:

§701. Sport Fishing Forms and Fees.

Application		Permit Fees (US\$)	Replacement Processing Fees (US\$)
(a)	Declaration for Multi-Day Fishing Trip (FG 935 (Rev. 2/13)), incorporated by reference herein	5.75	
(b)	2014 North Coast Salmon Report Card	5.75	
(c)	2014 Sturgeon Fishing Report Card	7.50	
(d)	2014 Sturgeon Fishing Replacement Report Card and Replacement Fee	7.50	7.50
(e)	2014 Spiny Lobster Report Card	8.75	
(f)	2014 Spiny Lobster Report Card Non-Return Fee	20.00	
(g)	2014 Abalone Replacement Report Card and Replacement Fee	9.50	7.50
(h)	2021 Recreational Crab Trap Validation	2.25	
(i)	<u>2025 Commercial Passenger Fishing Vessel Crab Trap Validation</u>	<u>17.75</u>	

~~(i)~~(i) Pursuant to the provisions of Section 699, Title 14, the department shall annually adjust the fees of all licenses, stamps, permits, tags, or other entitlements required by regulations set forth in this section.

Note: Authority cited: Sections 200, 205, 265, 275, 713, 1050, 1053.1 and 7149.8, Fish and Game Code. Reference: Sections 200, 205, 265, 275, 713, 1050, 1053.1, 1055.1 and 7149.8, Fish and Game Code.

Proposed Regulatory Language

Section 29.80, Title 14 CCR, is amended to read:

§29.80. Gear Restrictions for Recreational Take of Saltwater Crustaceans.

(a) General Provisions.

- (1) Saltwater crustaceans may be taken by hand.
- (2) Nets, traps or other appliances may not be used except as provided in this Section.

(3) Tampering Prohibition

(A) It is unlawful to disturb, move, or damage any trap; or remove any saltwater crustacean from a trap, that belongs to another person without written permission including permission transmitted electronically, in possession from the operator of the trap. Any person with written permission from the operator of a crab trap will be in compliance with subsection (c)(3)(A)1. if the written permission contains the operator's GO ID number that matches the GO ID number on the buoy of the crab trap being fished.

(B) Notwithstanding subsection (b)(5)(B), it is unlawful to disturb, move or damage any hoop net that belongs to another person. When on a vessel, hoop nets may be used by another person as long as the owner or operator of that hoop net is present, and if at least one person's GO ID number matches the GO ID number on the main buoy of the hoop net being fished. This subsection does not allow any person or any vessel to exceed the hoop net limits described in subsection (b)(4).

(4) It is unlawful to mark lines or use colored lines that are required in any other state or federal fishery operating in the U.S. West Coast Economic Exclusive Zone or in state waters of California, Oregon or Washington.

(b) Hoop nets. Hoop nets may be used to take spiny lobsters and all species of crabs.

(1) Hoop Net Defined: Only Type A and Type B hoop nets, as ~~describe~~ described below, are allowed for use:

(A) Type A: Fishing gear that is comprised of one to three rigid ring(s), with each ring measuring no greater than 36 inches in inside diameter nor less than 10 inches in inside diameter, which is/are connected to non-metallic soft mesh thereby forming a circular-shaped net with an enclosed bottom and with the following specifications:

1. Lift lines shall be attached only to the top ring;
2. A second and third rigid ring(s) may be connected by non-metallic soft mesh to the top ring; however, each ring must be equal in size to or smaller than the ring above it;
3. When the net is being raised, the top ring shall be above and parallel to

all other rings, with the enclosed bottom portion of the non-metallic soft mesh even with or hanging below all other rings;

4. All parts of the hoop net shall collapse and lie flat when resting on the ocean floor in such a manner that the gear does not entrap or restrict the free movement of crustaceans until lifted;

5. When suspended from lift lines, the entire hoop net shall measure no taller than 36 inches; and

6. The ring material shall not be thicker than one inch in any dimension.

(B) Type B: Fishing gear that is comprised of only two rigid rings (not including the bait ring), with the bottom ring measuring no greater than 36 inches in inside diameter and the top ring measuring no less than 15 inches in inside diameter and with the following specifications:

1. The top ring shall be connected to the bottom ring and supported by no more than six rigid straight support arms, and the assembled frame shall measure no more than 10 inches tall;

2. The rings and support material shall not be thicker than one inch in any dimension;

3. All rings shall be connected by non-metallic soft mesh, thereby forming a net with an enclosed bottom;

4. Lift lines shall be attached only to the top ring;

5. When suspended from lift lines, the enclosed bottom portion of the net shall be even with or hanging below the bottom ring, and the entire net shall measure no taller than 30 inches;

6. It is unlawful to have any entrances below the top ring; and

7. A bait ring may be used if it is attached to the bottom half of the net and it is not attached to any part of the rigid frame.

(2) The owner or operator of a hoop net shall raise the hoop net to the surface and inspect the contents of the hoop net at intervals not to exceed 2 hours.

(3) It is unlawful to abandon or leave unchecked a hoop net for more than 2 hours. Any hoop net left unchecked for more than 2 hours shall be considered abandoned and may be seized by any person authorized to enforce these regulations.

(4) Limits: Except for the limit of two hoop nets when taking crabs from a public pier under subsection 28.65(b), the following limits apply when taking spiny lobster or crab.

(A) Between Point Arguello, Santa Barbara County, and the United States-Mexico border, not more than five hoop nets shall be possessed or deployed by a person, unless when two or more persons are on a vessel, in which case not more than 10 hoop nets may be possessed or deployed from such vessel.

(B) North of Point Arguello to the California-Oregon border, there is no limit on the number of hoop nets that may be possessed or deployed.

(5) Hoop Net Identification Requirements: All hoop nets shall be marked with a surface buoy, except for those hoop nets deployed by persons on shore or manmade structures connected to the shore. North of Point Arguello to the California-Oregon border, hoop nets must have at least one main surface buoy that is no more than 6 inches in diameter and no more than 14 inches in length and may have one additional marker buoy that is yellow, that is no more than 6 inches in diameter and no more than 14 inches in length, and is attached no more than 3 feet from the main buoy.

(A) The main surface buoy of hoop nets deployed from commercial passenger fishing vessels shall be legibly marked to identify the commercial boat registration number of the vessel.

(B) The main surface buoy of hoop nets provided by a licensed guide to clients for use on guided trips shall be legibly marked to identify the guide license number of the accompanying guide.

(C) In all other cases, the main surface buoy of any deployed hoop net shall be legibly marked with the operator's GO ID number, or the GO ID number of at least one operator if there are multiple operators.

(6) Hoop nets shall not be deployed and used in ocean waters south of Point Arguello, Santa Barbara County, during the 24-hour period prior to the opening of the recreational spiny lobster season.

(c) Crab traps:

(1) Crab traps shall have at least two rigid circular openings of not less than four and one-quarter inches inside diameter so constructed that the lowest portion of each opening is no lower than five inches from the top of the trap.

(2) Crab traps shall contain at least one destruct device of a single strand of untreated cotton twine size No. 120 or less that creates an unobstructed escape opening in the top or upper half of the trap of at least five inches in diameter when the destruct attachment material corrodes or fails.

(3) Trap Gear Identification: Every crab trap shall be marked with only a main buoy and a marker buoy, except as noted under subsection 29.80(c)(3)(C) below.

(A) A main buoy is a surface buoy that is at least 5 inches in diameter and 11 inches in length.

1. The main buoy for traps deployed by an individual shall be legibly marked with the operator's assigned GO ID number.

2. The main buoy for traps deployed from a commercial passenger fishing vessel shall be legibly marked to identify the commercial boat registration number of that vessel.

(B) A marker buoy is a red buoy 3 inches in diameter and 5 inches in length attached no more than 3 feet from the main buoy.

(C) In addition to marking the buoy pursuant to subsection (c)(3)(A)2., traps deployed by commercial passenger fishing vessels shall be legibly marked to identify the commercial boat registration number of the vessel.

(4) Crab traps shall not be deployed and used in ocean waters seven days prior to the opening of the Dungeness crab season.

(5) Every crab trap shall be raised, cleaned, and emptied (serviced) at intervals not to exceed 9 days, weather conditions at sea permitting, and no crab trap shall be abandoned in the waters of this state.

(6) Trap Limits:

(A) An individual shall not operate more than 10 deployed traps, except an individual may service up to 10 additional traps if the individual has in possession written permission from the operator(s) of the additional traps whose gear are identified in accordance with subsection (c)(3)(A)1.

(B) A commercial passenger fishing vessel shall not deploy more than 60 traps per vessel.

(7) Starting at least 5 days in advance of the opening of the recreational Dungeness crab fishing season pursuant to Section 29.85, the director shall, on at least a monthly basis until the season opens statewide and March 1 through June 15, evaluate and respond to risk of humpback whales, blue whales, and/or Pacific leatherback sea turtle entanglement with recreational crab fishing gear as follows:

(A) The director shall evaluate entanglement risk based on marine life concentrations as defined in subsection 132.8(a)(408), Title 14, CCR, and confirmed entanglements in California Dungeness crab gear as defined in subsection 132.8(a)(4). This evaluation will be consistent with the acceptable data and numerical triggers outlined in ~~subsection~~ subsections 132.8(c)(1)-(2).

1. ~~If data are available, and marine life concentrations meet the numerical triggers for any species as specified in subsection 132.8(c)(2)(A)4. (in the fall) or 132.8(c)(2)(B) (in the spring), the director shall take action pursuant to subsection 29.80(c)(7)(B) below.~~ the director shall take action pursuant to subsection 29.80(c)(7)(B) when either of the following conditions are met:

a. Marine life concentrations meet the numerical triggers for any species as specified in subsection 132.8(c)(2)(A)4. or 132.8(c)(2)(B); or

b. Confirmed entanglements in California Dungeness crab gear meets the numerical triggers for any species as specified in subsection 132.8(c)(1).

2. If data are unavailable prior to the recreational Dungeness crab season opener, the director shall take action pursuant to subsection 29.80(c)(7)(B) below until data are available, at which point subsection 29.80(c)(7)(A)1. shall apply.

(B) If required under subsection 29.80(c)(7)(A) above, the director after consulting with the president of the commission or the president's designee, shall implement one or more of the following recreational management actions that the director demonstrates protects humpback whales, blue whales, and/or Pacific leatherback sea turtles based on best available science. Recreational management action shall be determined based on consideration of information outlined in subsection 132.8(d):

1. Advisory notice to recreational crab fishers to employ voluntary efforts and/or measures to reduce the risk of entanglements (e.g., best fishing practices).
2. Recreational Dungeness crab season delay and continuation of the crab trap prohibition specified in subsection 29.80(c)(4), whereby the director shall prohibit the deployment and use of recreational crab traps until new data indicates the numerical triggers for any species as specified in ~~subsection~~ subsections 132.8(c)(1) or 132.8(c)(2)(A)4. ~~(in the fall)~~ are no longer met, at which point the director shall lift or modify the Dungeness crab season delay as appropriate.
3. Season closure, whereby the director shall prohibit the deployment and use of recreational crab traps until new data indicates the numerical triggers for any species as specified in ~~subsection~~ subsections 132.8(c)(1) or 132.8(c)(2)(B) (in the spring) are no longer met, or the normal end of the Dungeness crab season specified in subsection 29.85(b)(2), at which point the director shall lift or modify the closure as appropriate.
4. Depth Constraint: The Director may use a depth constraint for crab traps during the Dungeness crab season where Dungeness crab may not be taken or possessed in waters within a specific depth range. "Depth" is defined by approximating a particular depth contour by connecting the appropriate set of waypoints adopted in Federal regulations and published in Title 50, Code of Federal Regulations Part 660, Section 660.71 (Revised March 1, 2023), 660.72 (Revised December 1, 2023), and 660.73 (Revised December 1, 2023), incorporated by reference herein.

(C) Recreational management action may be implemented statewide or by fishing zone(s) (as defined in subsections 132.8(a)(7)(A)-(G)), if the director demonstrates less-than-statewide action protects humpback whales, blue whales, and/or Pacific leatherback sea turtles based on best available science.

(D) Notice of a delay, ~~or closure,~~ or other management action pursuant to subsection 29.80(c)(7)(B)2., ~~or 3, or 4.~~ shall be transmitted via a director's

declaration. The declaration will describe the following:

1. Data supporting the entanglement risk evaluation pursuant to subsection 29.80(c)(7)(A).
2. Relevant information informing management considerations from subsection 132.8(d).
3. Rationale for nexus between management considerations in subsection 132.8(d) and chosen recreational management action under subsection 29.80(c)(7)(B).
4. Duration of management action.

(E) The director's declaration pursuant to subsection 29.80(c)(7)(D) shall provide a minimum of 5 days' notice before the delay or closure becomes effective.

(F) The director's declaration and/or any advisory notice shall be communicated via the department's "Whale Safe Fisheries" webpage located at <https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries>. At its discretion, the department may communicate declarations and/or advisory notices via additional formats.

(G) After the director implements a management action pursuant to subsection 29.80(c)(7)(B), he or she shall notify the commission and request that the commission schedule a public discussion of the management action at its next regularly-scheduled commission meeting.

...

[No changes to subsections (d)-(j)]

...

NOTE: Authority cited: Sections 200, 205, 399, 7075 and 7078, Fish and Game Code.
Reference: Sections 200, 205, 270, 275, 7050, 7055 and 7056, Fish and Game Code.

Section 29.85, Title 14 CCR, is amended to read:

§29.85. Crabs.

(a) Crab Trap Validations.

(1) Any individual who fishes for crabs using crab trap(s) pursuant to subsection 29.80(c), except from a Commercial Passenger Fishing Vessel, shall have in possession a valid Recreational Crab Trap Validation (Section 701, Title 14, CCR).

(2) A Commercial Passenger Fishing Vessel operator that fishes for crabs using crab traps shall have in possession a valid Commercial Passenger Fishing Vessel Crab Trap Validation (Section 701, Title 14, CCR).

...

[No changes to subsections (b)-(e)]

...

NOTE: Authority cited: Sections 200, 205, 265 and 275, Fish and Game Code. Reference: Sections 200, 205, 265 and 275, Fish and Game Code.

Section 195, Title 14 CCR, is amended to read:

§195. Report of Fish Taken To Be Made by Owner of Barge of Vessel for Hire, and Boat Limits.

(a) Pursuant to Section 190 the owner/operator of a commercial passenger fishing vessel shall keep a logbook of fishing activities.

(1) A separate log for each trip during a calendar day shall be completed.

(2) A separate log for each calendar day of a multi-day trip shall be completed.

~~(1) The form entitled Commercial Passenger Fishing Vessel Log, Central and Northern California, DFW 195A (Rev 01/16), incorporated by reference herein, shall be used when the vessel is engaged in fishing north of Point Conception.~~

~~(2) The form entitled Commercial Passenger Fishing Vessel Log, Southern California, DFW 195B (Rev 01/16), incorporated by reference herein, shall be used when the vessel is engaged in fishing south of Point Conception.~~

(b) Logbooks for Commercial Passenger Fishing Vessels contain the following fields and instructions:

(1) Log date; date shall be recorded prior to departure of any trip;

(2) Vessel name; name shall be recorded prior to departure of any trip;

(3) Vessel ID Number; number shall be recorded prior to departure of any trip;

(4) Port of landing; port shall be recorded prior to departure of any trip;

(5) Port code; code shall be recorded prior to departure of any trip;

(6) Operator's name; name shall be recorded prior to departure of any trip;

(7) Operator's signature;

(8) No fishing activity for the month of; for months when no fishing activity occurred for the entire month, a log shall be completed on the last day of the month and the month written in the box indicating no fishing activity occurred for the entire month;

(9) Trip type;

(10) Target species;

(11) Fishing method;

(12) Bait;

(13) Species;

(14) Number kept;

(15) Number thrown back;

(16) Lost to sea lions;

(17) Descending device;

(18) Bird interaction;

(19) Departure time;

(20) Return time;

(21) Hours and minutes fished;

(22) Block where most fish caught;

(23) Depth (feet);

(24) Sea surface temperature (°F);

(25) Number of fishers; the number of fishers who will fish, including crew members, shall be recorded prior to departure of any trip;

(26) Number of crew who fished;

(27) Number of fish caught by crew;

(28) Number of crab traps (only when crab fishing north of Point Arguello, Santa Barbara County);

(29) Number of hoop nets (only when crab fishing north of Point Arguello, Santa Barbara County).

(bc) The owner(s) and/or operator(s) of each vessel required to obtain a license under Section 7920 of the Fish and Game Code shall post a notice in a prominent place on the vessel giving information to fishermen on license requirements, bag limits, and other pertinent information. This notice shall be furnished by the department.

(ed) Both the vessel owner(s) and/or operator(s) shall be responsible for keeping complete and accurate records and insuring the vessel is in compliance with subsections (a) and (b) above. All of the fields and requirements listed in subsection (b) above shall be completed pursuant to section 190(c).

(de) All fishing activity records are confidential pursuant to Fish and Game Code Sections 7923 and 8022 and Government Code Sections 6276 and 6276.10.

(ef) Boat Limits: When two or more persons licensed or otherwise authorized to sport fish in ocean waters off California or in the San Francisco Bay District, as defined in Section 27.00, are angling for finfish in these waters aboard a vessel licensed under Section 7920, fishing by these persons (to include vessel operator(s) and crew members where licensed to sportfish under their own individual limits) may continue until the passenger's boat limits of those finfish are taken and possessed aboard the vessel as authorized under this section.

(1) For purposes of this section, the vessel operator(s) and crew members are not passengers and may not take fish towards obtaining boat limits for passengers except for casting, setting trolling gear, gaffing or netting fish, but may take fish during a fishing trip for their personal use only. Vessel operator(s) and crew members may assist passengers in other activities

including, but not limited to, obtaining bait, chumming, baiting and untangling hooks and lines, identifying, dispatching, filleting, counting, bagging and otherwise handling fish taken by passengers. Upon completion of a fishing trip, the vessel operator(s) and crew members may only possess fish that are part of their own personal bag limit not to exceed authorized sportfishing daily bag and possession limits.

(2) Fish taken by operator(s) and crew members for personal use pursuant to (ef)(1) above must be separated from fish taken under a boat limit and labeled in a manner that they can be identified as an individual operator's or crew member's fish. Operator(s) and crew members are also prohibited from giving all or part of their individual limit to any passenger during or after a trip.

(3) The authorization for boat limits aboard a vessel does not apply to fishing trips originating in California where fish are taken in other jurisdictions.

(4) A boat limit for a species or species group is equal to the number of passengers aboard the vessel that are licensed or otherwise authorized to sport fish in ocean waters off California or in the San Francisco Bay District multiplied by the individual daily bag limit authorized for a species or species group. For purposes of this section, the number of passengers shall not include the vessel operator(s) and crew members. It is unlawful to exceed the boat limit at any time.

(5) Prior to the departure on a fishing trip of a vessel that is licensed under Fish and Game Code Section 7920, the number of fishers, to include passengers, guests, operators and crew who will be fishing, shall be recorded under "number of fishers" on the logbook for that trip. In addition, the number of vessel operator(s) and crew members who will fish for that trip shall be recorded in the space to the right of the operator's signature on the logbook.

(6) Upon completion of a sport fishing trip aboard a vessel reporting under this section, each licensed or otherwise authorized angler may not possess more than the daily bag and possession limits. For the purposes of this section, a fishing trip is completed at the time a person disembarks from the vessel and individual possession limits apply.

(7) Species for which no daily bag limit exists are not included in the boat limit.

(fg) Where boat limits are provided for in this section, the vessel operator(s) and crew members may be cited for violations occurring aboard the vessel, including but not limited to violations of the following:

- (1) Overlimits
- (2) Possession of prohibited species
- (3) Minimum size limits
- (4) Fish taken out of season or in closed areas

(gh) Boat limits are not authorized for sturgeon fishing and shall not apply to the take, possession or retention of sturgeon.

NOTE: Authority cited: Sections 7071, 7920, 7923, 7924, 8026 and 8587.1, Fish and Game

Code. Reference: Sections 7055, 7056, 7058, 7060, 7120, 7850, 7923, 7924, 8026 and 8587.1, Fish and Game Code

Section 701, Title 14 CCR, is amended to read:

§701. Sport Fishing Forms and Fees.

Application		Permit Fees (US\$)	Replacement Processing Fees (US\$)
(a)	Declaration for Multi-Day Fishing Trip (FG 935 (Rev. 2/13)), incorporated by reference herein	5.75	
(b)	2014 North Coast Salmon Report Card	5.75	
(c)	2014 Sturgeon Fishing Report Card	7.50	
(d)	2014 Sturgeon Fishing Replacement Report Card and Replacement Fee	7.50	7.50
(e)	2014 Spiny Lobster Report Card	8.75	
(f)	2014 Spiny Lobster Report Card Non-Return Fee	20.00	
(g)	2014 Abalone Replacement Report Card and Replacement Fee	9.50	7.50
(h)	2021 Recreational Crab Trap Validation	2.25	
(i)	<u>2025 Commercial Passenger Fishing Vessel Crab Trap Validation</u>	<u>17.75</u>	

~~(i)~~(i) Pursuant to the provisions of Section 699, Title 14, the department shall annually adjust the fees of all licenses, stamps, permits, tags, or other entitlements required by regulations set forth in this section.

Note: Authority cited: Sections 200, 205, 265, 275, 713, 1050, 1053.1 and 7149.8, Fish and Game Code. Reference: Sections 200, 205, 265, 275, 713, 1050, 1053.1, 1055.1 and 7149.8, Fish and Game Code.



CENTRAL AND NORTHERN CALIFORNIA

SERIAL # **N**

VESSEL NAME <div></div>	PORT OF LANDING <div></div>
----------------------------	--------------------------------

VESSEL ID NUMBER <div></div>	PORT CODE <div></div>	TARGET SPECIES	FISHING METHOD	BAIT	LIVE	DEAD
		<input type="checkbox"/> SALMON	<input type="checkbox"/> TROLLING	ANCHOVIES	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> ROCKFISHES	<input type="checkbox"/> MOOCHING	SARDINES	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> LINGCOD	<input type="checkbox"/> ANCHORED	SQUID	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> STRIPED BASS	<input type="checkbox"/> DRIFTING	OTHER	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> STURGEON	<input type="checkbox"/> DIVING			
		<input type="checkbox"/> SHARKS	<input type="checkbox"/> OTHER			
		<input type="checkbox"/> TUNA				
		<input type="checkbox"/> OTHER				

No fishing activities for the month of:

DESCENDING DEVICE?
☐ YES ☐ NO

BIRD INTERACTION?
☐ YES ☐ NO

DEPARTURE TIME <div></div>	RETURN TIME <div></div>	HOURS & MINUTES FISHED <div></div>	NUMBER OF FISHERS <div></div>	BLOCK WHERE MOST FISH CAUGHT <div></div>	DEPTH (FEET) <div></div>	SEA SURFACE TEMP °F <div></div>
-------------------------------	----------------------------	---------------------------------------	----------------------------------	---	-----------------------------	------------------------------------

SPECIES	NUMBER KEPT	NUMBER THROWN BACK	LOST TO SEA LIONS	SPECIES	NUMBER KEPT	NUMBER THROWN BACK	LOST TO SEA LIONS
CHINOOK SALMON 302	<div></div>	<div></div>	<div></div>	ALBACORE 005	<div></div>	<div></div>	<div></div>
COHO 304 SALMON	<div></div>	<div></div>	<div></div>	PACIFIC 051 MACKEREL	<div></div>	<div></div>	<div></div>
LINGCOD 195	<div></div>	<div></div>	<div></div>	CALIFORNIA HALIBUT 222	<div></div>	<div></div>	<div></div>
CABEZON 261	<div></div>	<div></div>	<div></div>	SANDDAB 225	<div></div>	<div></div>	<div></div>
KELP 290 GREENLING	<div></div>	<div></div>	<div></div>	OTHER 230 FLATFISH	<div></div>	<div></div>	<div></div>
BLACK 252 ROCKFISH	<div></div>	<div></div>	<div></div>	STRIPED BASS 335	<div></div>	<div></div>	<div></div>
BLUE 665 ROCKFISH	<div></div>	<div></div>	<div></div>	GREEN 471 STURGEON	<div></div>	<div></div>	<div></div>
BOCACCIO ROCKFISH 253	<div></div>	<div></div>	<div></div>	WHITE 472 STURGEON	<div></div>	<div></div>	<div></div>
CANARY 247 ROCKFISH	<div></div>	<div></div>	<div></div>	WHITE 435 CROAKER	<div></div>	<div></div>	<div></div>
COPPER 655 ROCKFISH	<div></div>	<div></div>	<div></div>	LEOPARD SHARK 153	<div></div>	<div></div>	<div></div>
COWCOD 245 ROCKFISH	<div></div>	<div></div>	<div></div>	DUNGENESS CRAB 800	<div></div>	<div></div>	<div></div>
GOPHER 263 ROCKFISH	<div></div>	<div></div>	<div></div>	ROCK 718 SCALLOP	<div></div>	<div></div>	<div></div>
WIDOW 269 ROCKFISH	<div></div>	<div></div>	<div></div>		<div></div>	<div></div>	<div></div>
YELLOWEYE 265 ROCKFISH	<div></div>	<div></div>	<div></div>		<div></div>	<div></div>	<div></div>
UNSPECIFIED ROCKFISH 250	<div></div>	<div></div>	<div></div>		<div></div>	<div></div>	<div></div>

OPERATOR'S NAME (PRINT) <div></div>	OPERATOR'S SIGNATURE <div></div>	Number of crew who fished <div></div>	Number of fish caught by crew <div></div>
--	-------------------------------------	--	--

ORIGINAL: DEPARTMENT OF FISH AND WILDLIFE

DUPLICATE: OPERATOR'S COPY



CENTRAL AND NORTHERN CALIFORNIA

SERIAL # **N**

VESSEL NAME					PORT OF LANDING														
VESSEL ID NUMBER		PORT CODE		TARGET SPECIES		FISHING METHOD		BAIT		LIVE DEAD									
<input type="text"/>		<input type="text"/>		<input type="checkbox"/> SALMON <input type="checkbox"/> ROCKFISHES <input type="checkbox"/> LINGCOD <input type="checkbox"/> STRIPED BASS <input type="checkbox"/> STURGEON <input type="checkbox"/> SHARKS <input type="checkbox"/> TUNA <input type="checkbox"/> OTHER		<input type="checkbox"/> TROLLING <input type="checkbox"/> MOOCHING <input type="checkbox"/> ANCHORED <input type="checkbox"/> DRIFTING <input type="checkbox"/> DIVING <input type="checkbox"/> OTHER		ANCHOVIES SARDINES SQUID OTHER		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>									
MONTH DAY YEAR		TRIP TYPE																	
<input type="text"/> <input type="text"/> <input type="text"/>		<input type="checkbox"/> Multi-Day <input type="checkbox"/> Single Day <input type="checkbox"/> Non-Paying																	
No fishing activities for the month of: <input type="text"/>							DESCENDING DEVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO		BIRD INTERACTION? <input type="checkbox"/> YES <input type="checkbox"/> NO										
DEPARTURE TIME		RETURN TIME		HOURS & MINUTES FISHED		NUMBER OF FISHERS		BLOCK WHERE MOST FISH CAUGHT		DEPTH (FEET) SEA SURFACE TEMP °F									
<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>									
SPECIES		NUMBER KEPT		NUMBER THROWN BACK		LOST TO SEA LIONS		SPECIES		NUMBER KEPT		NUMBER THROWN BACK		LOST TO SEA LIONS					
CHINOOK SALMON 302		<input type="text"/>		<input type="text"/>		<input type="text"/>		ALBACORE 005		<input type="text"/>		<input type="text"/>		<input type="text"/>					
COHO 304 SALMON		<input type="text"/>		<input type="text"/>		<input type="text"/>		PACIFIC 051 MACKEREL		<input type="text"/>		<input type="text"/>		<input type="text"/>					
LINGCOD 195		<input type="text"/>		<input type="text"/>		<input type="text"/>		CALIFORNIA HALIBUT 222		<input type="text"/>		<input type="text"/>		<input type="text"/>					
CABEZON 261		<input type="text"/>		<input type="text"/>		<input type="text"/>		SANDDAB 225		<input type="text"/>		<input type="text"/>		<input type="text"/>					
KELP 290 GREENLING		<input type="text"/>		<input type="text"/>		<input type="text"/>		OTHER 230 FLATFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>					
BLACK 252 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		STRIPED BASS 335		<input type="text"/>		<input type="text"/>		<input type="text"/>					
BLUE 665 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		GREEN 471 STURGEON		<input type="text"/>		<input type="text"/>		<input type="text"/>					
BOCACCIO ROCKFISH 253		<input type="text"/>		<input type="text"/>		<input type="text"/>		WHITE 472 STURGEON		<input type="text"/>		<input type="text"/>		<input type="text"/>					
CANARY 247 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		WHITE 435 CROAKER		<input type="text"/>		<input type="text"/>		<input type="text"/>					
COPPER 655 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		LEOPARD SHARK 153		<input type="text"/>		<input type="text"/>		<input type="text"/>					
COWCOD 245 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		DUNGENESS CRAB 800		<input type="text"/>		<input type="text"/>		<input type="text"/>					
GOPHER 263 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		ROCK 718 SCALLOP		<input type="text"/>		<input type="text"/>		<input type="text"/>					
WIDOW 269 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>					
YELLOWEYE 265 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>					
UNSPECIFIED ROCKFISH 250		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>					
OPERATOR'S NAME (PRINT)					OPERATOR'S SIGNATURE					Number of crew who fished					Number of fish caught by crew				

ORIGINAL: DEPARTMENT OF FISH AND WILDLIFE

DUPLICATE: OPERATOR'S COPY



SOUTHERN CALIFORNIA

SERIAL # **S**

VESSEL NAME					PORT OF LANDING														
<input type="text"/>					<input type="text"/>														
VESSEL ID NUMBER		PORT CODE		TARGET SPECIES		FISHING METHOD		BAIT		LIVE DEAD									
<input type="text"/>		<input type="text"/>		<input type="checkbox"/> TUNA <input type="checkbox"/> SHARK <input type="checkbox"/> ROCKFISHES <input type="checkbox"/> LINGCOD <input type="checkbox"/> SALMON <input type="checkbox"/> OTHER		<input type="checkbox"/> TROLLING <input type="checkbox"/> MOOCHING <input type="checkbox"/> ANCHORED <input type="checkbox"/> DRIFTING <input type="checkbox"/> DIVING <input type="checkbox"/> OTHER		ANCHOVIES SARDINES SQUID OTHER		<input type="checkbox"/>	<input type="checkbox"/>								
MONTH DAY YEAR		TRIP TYPE								<input type="checkbox"/>	<input type="checkbox"/>								
<input type="text"/>		<input type="checkbox"/> Multi-Day <input type="checkbox"/> Single Day <input type="checkbox"/> Non-Paying								<input type="checkbox"/>	<input type="checkbox"/>								
<div>No fishing activities for the month of: <input type="text"/></div>					DESCENDING DEVICE? <input type="checkbox"/> YES <input type="checkbox"/> NO		BIRD INTERACTION? <input type="checkbox"/> YES <input type="checkbox"/> NO												
DEPARTURE TIME		RETURN TIME		HOURS & MINUTES FISHED		NUMBER OF FISHERS		BLOCK WHERE MOST FISH CAUGHT		DEPTH (FEET) SEA SURFACE TEMP °F									
<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>									
SPECIES		NUMBER KEPT		NUMBER THROWN BACK		LOST TO SEA LIONS		SPECIES		NUMBER KEPT		NUMBER THROWN BACK		LOST TO SEA LIONS					
BARRED 278 SAND BASS		<input type="text"/>		<input type="text"/>		<input type="text"/>		ALBACORE 005		<input type="text"/>		<input type="text"/>		<input type="text"/>					
CALIFORNIA 260 SCORPIONFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		BARRACUDA 130		<input type="text"/>		<input type="text"/>		<input type="text"/>					
CABEZON 261		<input type="text"/>		<input type="text"/>		<input type="text"/>		BLUEFIN TUNA 004		<input type="text"/>		<input type="text"/>		<input type="text"/>					
HALFMOON 478		<input type="text"/>		<input type="text"/>		<input type="text"/>		DOLPHIN FISH 481		<input type="text"/>		<input type="text"/>		<input type="text"/>					
KELP BASS 277		<input type="text"/>		<input type="text"/>		<input type="text"/>		PACIFIC BONITO 003		<input type="text"/>		<input type="text"/>		<input type="text"/>					
LINGCOD 195		<input type="text"/>		<input type="text"/>		<input type="text"/>		PACIFIC 051 MACKEREL		<input type="text"/>		<input type="text"/>		<input type="text"/>					
OCEAN 490 WHITEFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		SKIP JACK 002		<input type="text"/>		<input type="text"/>		<input type="text"/>					
SHEEPHEAD 145		<input type="text"/>		<input type="text"/>		<input type="text"/>		WHITE 435 CROAKER		<input type="text"/>		<input type="text"/>		<input type="text"/>					
BLUE 665 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		WHITE 400 SEABASS		<input type="text"/>		<input type="text"/>		<input type="text"/>					
BOCACCIO ROCKFISH 253		<input type="text"/>		<input type="text"/>		<input type="text"/>		YELLOWFIN TUNA 001		<input type="text"/>		<input type="text"/>		<input type="text"/>					
CANARY 247 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		YELLOWTAIL 040		<input type="text"/>		<input type="text"/>		<input type="text"/>					
COPPER 655 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		CALIFORNIA HALIBUT 222		<input type="text"/>		<input type="text"/>		<input type="text"/>					
COWCOD 245 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		SANDDAB 225		<input type="text"/>		<input type="text"/>		<input type="text"/>					
GOPHER 263 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		LOBSTER 820		<input type="text"/>		<input type="text"/>		<input type="text"/>					
WIDOW 269 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		ROCK 718 SCALLOP		<input type="text"/>		<input type="text"/>		<input type="text"/>					
YELLOWEYE 265 ROCKFISH		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>					
UNSPECIFIED ROCKFISH 260		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>					
OPERATOR'S NAME (PRINT)					OPERATOR'S SIGNATURE					Number of crew who fished					Number of fish caught by crew				
<input type="text"/>					<input type="text"/>					<input type="text"/>					<input type="text"/>				



SOUTHERN CALIFORNIA

SERIAL # **S**

VESSEL NAME				PORT OF LANDING					
VESSEL ID NUMBER				PORT CODE	TARGET SPECIES	FISHING METHOD	BAIT	LIVE	DEAD
<div>MONTH DAY YEAR</div>				<div>TRIP TYPE</div>	<div><input type="checkbox"/> TUNA <input type="checkbox"/> SHARK <input type="checkbox"/> ROCKFISHES <input type="checkbox"/> LINGCOD <input type="checkbox"/> SALMON <input type="checkbox"/> OTHER</div>	<div><input type="checkbox"/> TROLLING <input type="checkbox"/> MOOCHING <input type="checkbox"/> ANCHORED <input type="checkbox"/> DRIFTING <input type="checkbox"/> DIVING <input type="checkbox"/> OTHER</div>	<div>ANCHOVIES SARDINES SQUID OTHER</div>	<div><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></div>	<div><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></div>
<div>No fishing activities for the month of:</div>				<div>DESCENDING DEVICE?</div>		<div>BIRD INTERACTION?</div>			
<div>DEPARTURE TIME</div>				<div>RETURN TIME</div>	<div>HOURS & MINUTES FISHED</div>	<div>NUMBER OF FISHERS</div>	<div>BLOCK WHERE MOST FISH CAUGHT</div>	<div>DEPTH (FEET)</div>	<div>SEA SURFACE TEMP °F</div>
SPECIES	NUMBER KEPT	NUMBER THROWN BACK	LOST TO SEA LIONS	SPECIES	NUMBER KEPT	NUMBER THROWN BACK	LOST TO SEA LIONS		
BARRED 278 SAND BASS				ALBACORE 005					
CALIFORNIA 260 SCORPIONFISH				BARRACUDA 130					
CABEZON 261				BLUEFIN TUNA 004					
HALFMOON 478				DOLPHIN FISH 481					
KELP BASS 277				PACIFIC BONITO 003					
LINGCOD 195				PACIFIC 051 MACKEREL					
OCEAN 490 WHITEFISH				SKIP JACK 002					
SHEEPHEAD 145				WHITE 435 CROAKER					
BLUE 665 ROCKFISH				WHITE 400 SEABASS					
BOCACCIO ROCKFISH 253				YELLOWFIN TUNA 001					
CANARY 247 ROCKFISH				YELLOWTAIL 040					
COPPER 655 ROCKFISH				CALIFORNIA HALIBUT 222					
COWCOD 245 ROCKFISH				SANDDAB 225					
GOPHER 263 ROCKFISH				LOBSTER 820					
WIDOW 269 ROCKFISH				ROCK 718 SCALLOP					
YELLOWEYE 265 ROCKFISH									
UNSPECIFIED ROCKFISH 260									
OPERATOR'S NAME (PRINT)				OPERATOR'S SIGNATURE		Number of crew who fished		Number of fish caught by crew	

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME Fish and Game Commission	CONTACT PERSON David Thesell	EMAIL ADDRESS fgc@fgc.ca.gov	TELEPHONE NUMBER 916 201-6201
DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400 Amend sec. 29.80, 29.85, 190, 195, and 701, Title 14 CCR re: Recreational Crab			NOTICE FILE NUMBER Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:

- | | |
|---|---|
| <input type="checkbox"/> a. Impacts business and/or employees | <input type="checkbox"/> e. Imposes reporting requirements |
| <input checked="" type="checkbox"/> b. Impacts small businesses | <input type="checkbox"/> f. Imposes prescriptive instead of performance |
| <input type="checkbox"/> c. Impacts jobs or occupations | <input checked="" type="checkbox"/> g. Impacts individuals |
| <input type="checkbox"/> d. Impacts California competitiveness | <input type="checkbox"/> h. None of the above (Explain below): |

*If any box in Items 1 a through g is checked, complete this Economic Impact Statement.**If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.*2. The **Fish and Game Commission** estimates that the economic impact of this regulation (which includes the fiscal impact) is:
(Agency/Department)

- ☒ Below \$10 million
- ☐ Between \$10 and \$25 million
- ☐ Between \$25 and \$50 million
- ☐ Over \$50 million *[If the economic impact is over \$50 million, agencies are required to submit a [Standardized Regulatory Impact Assessment](#) as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: **~61, see add.**Describe the types of businesses (Include nonprofits): **Commercial Passenger Fishing Vessels (CPFVs)**Enter the number or percentage of total businesses impacted that are small businesses: **100%**4. Enter the number of businesses that will be created: **0** eliminated: **0**Explain: **The requirement to fit hoop nets with the required buoys should not induce adverse effects, see addendum.**5. Indicate the geographic extent of impacts: ☐ Statewide
☒ Local or regional (List areas): **Coastal areas where recreational crab are trapped**6. Enter the number of jobs created: **0** and eliminated: **0**Describe the types of jobs or occupations impacted: **It is not anticipated that the proposed regulations will adversely or positively impact jobs within the state.**7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? ☐ YES ☒ NO

If YES, explain briefly: _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)**B. ESTIMATED COSTS** *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? \$ 1,617,403/year
- a. Initial costs for a small business: \$ 514 Annual ongoing costs: \$ 194 Years: 3
- b. Initial costs for a typical business: \$ _____ Annual ongoing costs: \$ _____ Years: _____
- c. Initial costs for an individual: \$ 75 Annual ongoing costs: \$ 75 Years: 3
- d. Describe other economic costs that may occur: The primary cost is the cost of purchasing a buoy to attach to the hoop net to attach to the hoop net. CPFVs will also have to pay the labor cost to attach the buoy to the hoop net. See addendum.
2. If multiple industries are impacted, enter the share of total costs for each industry: Commercial Passenger Fishing Vessels (CPFVs) are the only industry affected by the proposed regulations.
3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted. \$ N/A
4. Will this regulation directly impact housing costs? ☐ YES ☒ NO
If YES, enter the annual dollar cost per housing unit: \$ _____
Number of units: _____
5. Are there comparable Federal regulations? ☐ YES ☒ NO
- Explain the need for State regulation given the existence or absence of Federal regulations: Fish and Game Commission's authority to regulate sport fishing in state waters to manage marine resources. Existing Federal regs do not address hazards from rec crab lines.
- Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: \$ N/A

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: Benefits to the State's environment include better information on recreational crab fishery activity to aid the management of marine resources for continued sport fishing and to reduce the risk of marine life entanglement. No direct impacts to health and worker safety, though promoting outdoor activity is beneficial for health outcomes.
2. Are the benefits the result of: ☐ specific statutory requirements, or ☒ goals developed by the agency based on broad statutory authority?
Explain: Fish and Game Code sec. 200, 205, 315, and 316.5
3. What are the total statewide benefits from this regulation over its lifetime? \$ 2,530,945/whale, see add.
4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: None.
The proposed regulation is not likely to increase or decrease recreational fishing activity in a manner that would induce the expansion of businesses currently doing business within the State.

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: During the outreach period alternatives alternatives of the regulation change were discussed. No other alternatives were identified or brought to the attention of Department staff that would have the same desired regulatory effect. See addendum.

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: \$ 2,530,945/whale Cost: \$ 1,617,403/yr

Alternative 1: Benefit: \$ N/A Cost: \$ N/A

Alternative 2: Benefit: \$ N/A Cost: \$ N/A

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives:

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs?

☐ YES☒ NO

Explain: Performance standards were not considered because they would not achieve the same desired regulatory effect as the marker buoys would.

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises exceed \$10 million? ☐ YES ☐ NO*If YES, complete E2. and E3**If NO, skip to E4*

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 1: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 2: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding \$50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented?

☐ YES☒ NO

If YES, agencies are required to submit a Standardized Regulatory Impact Assessment (SRIA) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: The economic impact from these regulations is unlikely to stimulate any increase or decrease in investment within the state, as they pertain to recreational fishing and only impact approximately 61 CPFV businesses.

The incentive for innovation in products, materials or processes: The economic impact from these regulations is unlikely to stimulate any change in incentives innovation in products, materials, or processes.

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: No benefits to worker safety, but there may be health benefits to residents from promoting outdoor activities. Benefits to the state's environment include reduced entanglement risk.

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

FISCAL IMPACT STATEMENT**A. FISCAL EFFECT ON LOCAL GOVERNMENT** *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

- ☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

- ☐ a. Funding provided in _____
Budget Act of _____ or Chapter _____, Statutes of _____

- ☐ b. Funding will be requested in the Governor's Budget Act of _____
Fiscal Year: _____

- ☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

- ☐ a. Implements the Federal mandate contained in _____
- ☐ b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

- ☐ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

- ☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

- ☐ e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

- ☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

- ☐ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

- ☐ 3. Annual Savings. (approximate)

\$ _____

- ☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

- ☒ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

- ☐ 6. Other. Explain _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

FISCAL IMPACT STATEMENT (CONTINUED)**B. FISCAL EFFECT ON STATE GOVERNMENT** *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

It is anticipated that State agencies will:☐ a. Absorb these additional costs within their existing budgets and resources.☐ b. Increase the currently authorized budget level for the _____ Fiscal Year☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☐ 3. No fiscal impact exists. This regulation does not affect any State agency or program.☒ 4. Other. Explain These regulations will likely reduce revenue from fewer validations sold customers on board Commercial Passenger Fishing Vessels, with an annual revenue loss of \$3,455.37. See addendum.**C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS** *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.☐ 4. Other. Explain _____

FISCAL OFFICER SIGNATURE



DATE

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY



DATE

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER



DATE

STD399 Economic and Fiscal Impact Addendum
Amend Sections 29.80, 29.85, 195 and 701,
Title 14, California Code of Regulations,
Regarding Recreational Crab Fishing Gear and Commercial Passenger
Fishing Vessel Trap Validation

Background

The California Fish and Game Commission (Commission) proposes to amend sections 29.80, 29.85, 190, 195 and 701 of Title 14, California Code of Regulations (CCR) related to the recreational Dungeness crab fishery; the regulations specify seasons, size limits, bag and possession limits, closed fishing areas, and gear restrictions. Crabs can be taken recreationally by hand, crab trap, crab loop trap (snare), or hoop net. The proposed regulatory amendments focus on updates to recreational crab gear restrictions and are necessary to update hoop net operations, provide additional tools to address entanglement risk of recreational crab traps, and prohibit unique line marks required in other fisheries from being used in recreational gear.

Hoop net gear (not used from shore) must have a surface buoy that is marked to indicate the specific operator either by an individual's GO ID, a commercial passenger fishing vessel (CPFV) commercial boat registration number, or a guide license's identification number (subsection 29.80(b)(5)). There are three geographic limits on the number of hoop nets: (1) Two hoop nets may be used on a public pier (subsection 28.65(b)), (2) no limit on the number of hoop nets that may be possessed or deployed by an individual or CPFV from the California/Oregon border to north of Point Arguello (subsection 29.80(b)(4)(B)), and (3) five hoop nets may be possessed or deployed by an individual or no more than ten nets per vessel between Point Arguello and the United States-Mexico border (subsection 29.80(b)(4)(A)).

CPFVs take customers on fishing trips and provide fishing gear, either hoop nets or crab traps. Customers are required to have the proper licenses on board, including a crab trap validation when on a CPFV using crab traps. In 2022, the Commission received a petition requesting the Commission establish a CPFV validation so that CPFV customers would no longer be required to possess individual trap validations. Instead, the petition suggested that a CPFV-specific validation be required for CPFV operators that utilize crab traps, avoiding individual customers having to purchase validations.

The proposed regulatory amendments would require an update to the paper and electronic versions of the CPFV fishing logbook to directly provide trap and hoop net fishing effort information to the Department. The logbook updates are supported by the Department since the data collected helps inform fishery management.

The fee to recover reasonable administrative and program costs has been determined to be \$17.75 as shown in Table 1. The number of items sold per year of 61 was determined from the average number of CPFVs reporting Dungeness crab take between 2020 and 2024, as shown in Table 2.

Table 1. Item Fee Calculation for CPFV Validation with Number of Expected Items Sold per Year: 61.

Cost Description	Hours	Rate*	Total
<i>Start Up Costs</i>			
<i>ALDS IT Support: Item setup/Configuration/reporting</i>			
Information Technology Specialist I	8	\$70.22	\$561.76
Total Startup Costs			\$561.76
Amortized over 5 years			\$112.35
Amortized Startup Costs per Item (61 items):			\$1.84
<i>Ongoing Annual Program Costs</i>			
<i>ALDS IT Support: Item Review</i>			
Information Technology Specialist I	4	\$70.22	\$280.88
<i>Program Operations Staff time (planning, labor, project tracking, etc.)</i>			
Information Technology Specialist I (developer – bug fixes, enhancements)	4	\$70.22	\$280.88
Information Technology Specialist I (analyst – bug fixes, enhancements)	2	\$70.22	\$140.44
Total Annual Program Costs			\$702.20
Annual Program Costs per Item (61 items):			\$11.51
<i>Item Fee Calculation</i>			
Amortized Startup Cost per Item Sold			\$1.84
Annual Program Cost per Item Sold			\$11.51
Overhead for above costs		21%	\$2.76
ALDS System costs per transaction			\$0.78
LRB Operations costs per transaction			\$0.89
Item fee:			\$17.78
Item Fee (rounded to nearest 0.25) per F&G Code Section 713			\$17.75

*Rate per hour = hourly wage with benefits

Sources: CalHR for State Employee by Classification Payscales; CDFW Budgets Branch for Staff Benefit Rates 2024/25 and Departmental Overhead Rates 2024/25.

Table 2. Average Number of CPFV Vessels Engaged in Dungeness Crab Take

Year	Vessels
2020	65
2021	60
2022	67
2023	56
2024	59
Average Number of Vessels (rounded to nearest whole number)	61

*Source: CDFW, CPFV logs, 2020-2024.***Economic Impact Statement**

A. Estimated Private Sector Cost Impacts

Answer 1. b. Impacts small businesses g. Impacts individuals:

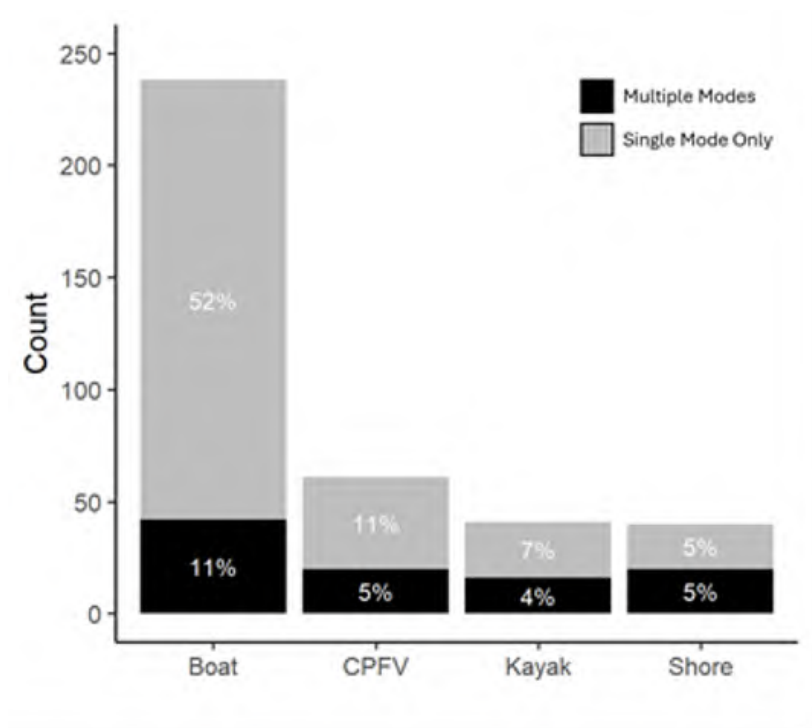
The proposed changes are necessary to update hoop net operations, provide additional tools to address entanglement risk of recreational crab traps, and prohibit unique line marks required in other fisheries from being used in recreational gear. The Department's annual crab trap validation data¹ indicated that approximately 41,330 individuals engaged in recreational crab trap fishing in 2023.

Using responses from the Department's 2023 crab validation survey sent to a random subset of 2023 crab trap validation purchasers (Figure 1), [an estimated?] 30,584 fishers out of the 41,330 individuals who purchased crab trap validations actually fished for crab in 2023 and would be affected by the proposed regulatory changes. Based on the survey results, 48% of those fishers used crab traps in 2023, or approximately 14,681 individuals. Survey respondents were asked about fishing modes, of which 11% fished with crab traps only from a CPFV. Applying this percentage to the 14,681 individuals who recreationally fished with a crab trap in 2023 yields approximately 1,615 fishers who fished with crab traps only from a CPFV. The survey results do not capture the modes used by fishers who used hoop nets, but a separate question from the same survey estimated that 70% of crab fishers used hoop nets; applying this percentage to the 30,584 fishers who went fishing for crab in 2023 yields approximately 21,409 fishers who used hoop nets to fish for crab in 2023 and would potentially be impacted by the proposed regulations.

CPFVs provide recreational fishing trips for ocean species, and those who provide Dungeness crab trips (average of 61 vessels, per Table 2), would also be directly affected by the proposed regulations. CPFVs operating in California are characterized as small businesses (per California Government Code, Article 2, Section 11342.610) as all are independently owned and operated, and they are not dominant in their field of operation.

¹ CDFW, ALDS item sales data extracts: 2020 – 2024.

Figure 1. CDFW 2023 Crab Trap Validation Survey Results Showing Crab Trap Fishing by Mode (survey distributed March 2024)



B. Estimated Costs

Answer 1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime?

1 a. Initial costs for a small business: = **approximately \$514.**

CPFVs may need to purchase an additional buoy for any hoop nets deployed if they choose to use this for their operations, but it is not required. An optional yellow marker buoy could average \$15.00 that if utilized would be placed on up to 25 hoop nets per CPFV. It would cost up to \$375 for a CPFV to purchase additional yellow marker buoys for hoop nets (\$15 estimated per buoy cost x up to 25 hoop net buoys for 25 hoop nets per CPFV) + \$120.31 in labor costs (\$19.25/hr x 0.25 hours/hoop net x up to 25 hoop nets per CPFV) = up to approximately \$495.31 per CPFV, resulting in initial industry costs of approximately \$30,214.06 (**\$30,214**). Buoys can be purchased at most outdoor supply retailers or online and require about an hour to attach to the hoop nets. The average hourly wage for all other farming, fishing, and forestry workers was \$18.55/hr in 2023 according to Occupational Employment Statistics from the U.S. Bureau of Labor Statistics (adjusted to \$19.25/hr for 2024), and it is estimated that it takes approximately 15 minutes to attach each buoy to a hoop net. Additionally, the proposed regulation changes the requirement for crab trap validation: individuals (passengers) no longer must purchase the crab trap validation when fishing from a CPFV, but CPFV owners must now purchase a CPFV-specific validation, the cost of which is proposed to be \$18.28 under these regulations. It should be noted that the cost of the validation includes a \$0.53 surcharge from the agent selling the validation that is not collected by the Department, and that the revenue generated from the validation by the Department is \$17.75. Adding the validation cost to the \$495.31 cost for buoy purchase and installation

brings the initial cost to small businesses up to approximately \$513.59 (**\$514**) for a total industry cost of approximately \$31,329.14 (**\$31,329**).

Annual ongoing costs: = up to approximately **\$194 per CPFV**.

Department staff have indicated that the average loss rate for commercial crab traps is about 10% annually. While the Department does not have similar information for the loss rate for the recreational traps used by CPFVs, for this analysis we assume that recreational crab traps are less sturdy than commercial traps and that the annual loss rate is double the commercial rate at 20%. CPFVs on average carry about 25 hoop nets with two buoys for each hoop net under the proposed regulations, or 50 buoys per CPFV, making the annual loss 5 traps and 10 buoys per year based on the assumed 20% annual loss rate. The annual cost to CPFVs for buoy replacement and the CPFV Crab Trap Validation fee is estimated as the following:

(\$150 to replace up to 10 buoys due to damage or loss, or \$15.00 x 10 hoop net buoys) + (\$24.06 in labor costs, or \$19.25/hr x 0.25 hours/hoop net x 5 hoop nets per CPFV) + (\$18.28 CPFV Crab Trap Validation fee) = up to \$194.34 per CPFV.

1 c. Initial costs for an individual: = a total that ranges from **\$75**.

For fishers who deploy hoop nets on their own, the new gear marking requirement for an additional buoy on each hoop net has an estimated cost of \$15.00 for each new additional buoy for the average of 5 hoop nets (10 total buoys under the regulation) = \$75 for initial costs. Buoys can be purchased at most outdoor supply retailers or online. While most fishers use buoys on their hoop nets and fewer than the 10 hoop nets per fisher, and fishers who fish from private boat or shoreline do not necessarily use marker buoys, this analysis takes a robust approach and assumes that each fisher would need to attach a buoy to the average of 5 hoop nets per fisher regardless of mode.

Annual ongoing costs: = **\$75**. The potential replacement of up to 5 buoys (due to damage or loss) or \$15.00 x 5 = \$75.00. Most fishers do not replace all of their buoys in one year due to using their hoop nets less frequently than CPFVs do, but this analysis assumes that half of the potential 10 buoys are replaced annually (half would presumably be newer from the implementation of the regulation and would need to be replaced after the original 5 buoys) for an annual replacement cost of \$75.

Total Statewide Annual Costs = approximately **\$1,617,403**, consisting of:

- (Individual Annual Ongoing Costs: \$75 annual buoy replacement cost per/fisher x approximately 21,409 recreational crab fishers who use hoop nets) = **\$ \$1,605,670.50 +**
- (CPFV Annual Ongoing Costs: \$150 buoy costs + labor costs of \$24.06 + CPFV Crab Trap Validation fee of \$18.28 x 61 CPFVs per year) = **\$11,732.89**
- **Total = \$1,617,403.39**

C. Estimated Benefits

Answer 3. Total statewide benefits: **\$2,530,945 per whale**

There are some challenges in the quantification of the anticipated benefits of the proposed regulation because the intended outcomes are comprised of non-use values. The aim is to help reduce the entanglement risk posed by recreational crab fisheries activities toward marine animals protected by the federal Endangered Species Act and Marine Mammal Protection Act.

The proposed regulations build off existing regulations for reducing the risk of marine life entanglements in recreational crab trapping gear and would also help the state obtain valuable information on recreational crab fisheries to help better mitigate entanglement risk and better manage the crab fisheries overall to meet the state's various policy goals. The Commission anticipates that the benefits of the proposed regulations may include the value of reducing whale entanglement risk.

The value of reduced, unintended, marine life entanglements in a recreational fishery is inherently difficult to monetize. Any unintended catch, known as "bycatch," whether a listed marine mammal, sea turtle or any other non-target species, could not be traded in the market per codes regarding recreational take. The valuation of bycatch in this case, would be entirely "non-use" (or "non-consumptive") values, that could be estimated with contingent valuation surveys of residents and non-residents as to how much they would pay to protect the various non-target marine wildlife from harm due to this recreational fishery. Such contingent valuation information informs the derivation of the existence, bequest, and altruistic values which are likely to be substantial, given the widely held concern for whales in particular. Additionally, the ecosystem value of a whale's life, or the contribution of that life to the nutrient composition that supports other marine life, along with beneficial carbon sequestration and more, has been estimated to be \$2 million per whale (Chami et al., 2019²).

Given the monetization difficulties, this analysis first focuses more narrowly on the monetized market-traded direct uses, such as expenditures in the whale-watching industry, supplemented with monetized travel costs research to estimate the benefits of reducing the risk of marine life entanglement. Whale-watching is an industry that draws value from an abundance of whales that will attract more whale-watchers. Whale-watchers derive value from the sighting of whales and, in theory, the ticket price along with the travel costs of getting to the shore equal the "price" of seeing whales. The value of the whale-watching industry is evaluated as a proxy for the value of an abundance of whales.

A literature survey³ of the economic contribution of the whale watching industry in California yielded an estimated \$51,576,573 to \$69,250,259 in direct expenditures annually (adjusted from 2021 values to December 2024 values using the Consumer Price Index, which is not yet available for 2025). Whale watching tourism spending that is the "direct expenditures" are received by various businesses: tour boat operators, fuel, food, and other retailers, restaurants, hotels, and service providers associated with vacation travel. Those businesses spend (indirect effect) received tourism dollars on operating expenses including payroll. Employees at those establishments receive wages that are then spent (induced effect) on living expenses. A share of business and employee spending remains within the local and state economy, while some may "leak out," of the state if dollars are spent on goods or services from outside the state. The multipliers are derived from extensive industry analysis of the interconnections from direct expenditure dollars to indirect, and induced spending by associated businesses and employees as dollars are re-spent within the region. The sum of dollars circulated by the initial direct expenditures that serve to support the region's economy comprise the total economic impact.

² Chami, R., Cosimano, T., Fullenkamp, C. and S. Oztosun. 2019. Nature's Solution To Climate Change: A strategy to protect whales can limit greenhouse gases and global warming, Finance & Development, December 2019.

³ Erich Hoyt and E.C.M.Parsons (2014); Knowles, T., Campbell, R. (2011); Linwood Pendleton, (2006).

The multipliers for whale-watching tourism expand the initial direct expenditure to a range of \$147,852,844 to \$198,517,410 (adjusted to December 2024 values from 2021 values of \$127,894,900 to \$171,720,500) in total economic value for the whale-watching industry, that supports approximately 79 jobs per \$1 million in direct expenditures. With a total economic value of the industry the next steps taken to arrive at the monetary value of an individual whale are shown below.

Total Economic Value of Whale-Watching Tourism

[Range = \$147,852,844 to \$198,517,410]

The travel cost research that traces the additional real costs of travel (e.g. gas and time) to estimate the consumer surplus of whale-watching beyond the direct ticket costs was also surveyed as part of the literature review⁴ from the previous rulemaking for the Department's Risk Assessment and Mitigation Program (RAMP) in 2020. Consumer surplus is the benefit that consumers reap beyond what is paid for the experience.

Travel Cost as a Measure of Consumer Surplus

[Average total = \$60,577]

The average total travel cost values were added to the total economic impact of direct expenditures in the state. That sum was then divided by the number of whales of the species traveling in the water depths and areas that could be most likely vulnerable to entanglement with crab gear lines. This provides a measure of the total economic value of the whale watching industry and travel cost consumer surplus per whale.

$(\$147,852,844 + \$60,577)/2,442 \text{ whales} = \text{approximately } \$60,571 \text{ per whale}$
 $(\$198,517,410 + \$60,577)/2,442 \text{ whales} = \text{approximately } \$81,318 \text{ per whale}$

The number of whales off the California coast at risk of entanglement in recreational crab gear is the other key factor in assigning a value for the benefits of this regulatory action. Records on whale entanglement off the California coast show that at least three whales have been entangled over recent years in recreational crab gear (Draft Conservation Plan for California's Commercial Dungeness Crab Fishery 2020). This regulation is intended to reduce the frequency of entanglements of large whales and sea turtles.

The total benefit would be about \$60,571 to \$81,318, with an average of approximately \$70,945 for each whale that is not entangled in recreational crab gear. If the \$2.46M 2024 adjusted ecosystem services value (Chami, et al., 2019) of that whale is included, the proposed regulation benefits sums to **\$2,530,945 per whale.**

D. Alternatives to the Regulation

During the outreach period, alternatives to the regulation change were discussed. No other alternatives were identified or brought to the attention of the Commission or Department staff that would have the same desired regulatory effect; therefore, the costs and benefits of the

⁴ Erich Hoyt and E.C.M.Parsons (2014); Knowles, T., Campbell, R. (2011); Linwood Pendleton, (2006)

alternatives were not considered after the alternatives were discussed and rejected by the Commission. The alternatives discussed were the following:

Alternative 1

Consider adding hoop nets to the recreational entanglement evaluation process. Members of the public were not supportive of this change since the 2-hour service interval already precludes long soak periods to reduce entanglement risk by the use of this gear. Hoop net gear has not been positively identified in any known confirmed entanglements.

Alternative 2

Consider adding a gear reduction to the available management actions as part of the recreational entanglement evaluation process. Upon further discussions with recreational fishery constituents, this may not be an effective tool for reducing overall gear by the recreational sector since traps may be shared among users (subsection 29.80(c)(6)(A)).

Alternative 3

Only allow a main buoy with no optional marker buoy. During discussions with recreational fishery constituents, they stated the necessity for an additional buoy on the hoop net was due to removing the hoop net within the service interval period by the conclusion of a fishing trip. An additional buoy compensates for the effect of strong ocean currents pulling surface gear below the water line.

Alternative 4

Allow up to 6 feet of surface line between the main buoy and marker buoy of hoop nets. Although hoop nets have not been attributed to entanglements, minimizing surface lines will also minimize risk of entanglements especially as this gear is allowed to be used when marine life concentration triggers are met, resulting in a trap prohibition. Limiting surface line to be similar to what is required for crab traps can allow for the use of an additional buoy on the hoop net.

No Change Alternative

Without change, hoop net surface gear may continue to use the same buoys as required on crab traps while tampering of another person's hoop nets would not be explicitly prohibited. In addition, the recreational entanglement evaluation would continue to assess entanglement risk solely based on triggers for marine life concentrations of protected species. The management actions available to the Department director during periods of elevated risk would be limited to a fleet advisory or a crab trap prohibition with no intermediary action. The crab trap validation would be required for all users of crab traps regardless of fishing mode. Uniquely marked lines either could be purchased and used in the rigging of lines for recreational crab traps and hoop nets and misidentified as other fishing gear in confirmed U.S. West Coast entanglements.

Fiscal Impact Statement

A. Fiscal Effect on Local Government

Answer 5. No fiscal impact.

The Department anticipates that the proposed regulatory action will have no fiscal effect on any local government entity or program.

B. Fiscal Effect on State Government

Answer 4. Other. Explain:

The proposed regulations are anticipated to change the revenue collected by the Department from recreational crab validation sales.

The Department expects to sell at least 61 of the new CPFV recreational crab trap validations at the cost of \$18.28 for an annual validation, though the revenue the Department receives from each sale is \$17.75 due to the \$0.53 surcharge. The sales revenue anticipated from 61 validations sold is \$1,082.75. However, the proposed changes will shift the requirement to purchase a recreational crab trap validation from individual fishers using CPFVs only to the CPFV operators. Using the responses from the Department's 2024 Recreational Crab Fishing by Mode survey (Figure 1) and applying the 11% of respondents who fished with a crab trap from only a CPFV to the 14,681 individuals who recreationally fished for crab with a crab trap in 2023, approximately 1,615 recreational crab fishers did so solely from a CPFV. The Department receives \$2.83 in revenue per recreational crab trap validation sold, so removing 1,615 fishers from the requirement to purchase a recreational crab trap validation when fishing from a CPFV would result in a \$4,570.45 loss in revenue for the Department. Combined with the \$1,082.75 in revenue from CPFV recreation crab trap validation sales, this would net the Department an annual revenue loss of **\$3,455.37**.

The Commission does not anticipate any additional expenditures for enforcement, as the requirements of the proposed regulation should fold into existing duties and budgets.

C. Fiscal Effect on Federal Funding of State Programs

Answer 3. No fiscal impact.

The proposed regulatory action will not have a fiscal effect on federal funding of state programs.

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

Code of Federal Regulations > TITLE 50 -- WILDLIFE AND FISHERIES > CHAPTER VI -- FISHERY CONSERVATION AND MANAGEMENT, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE > PART 660 -- FISHERIES OFF WEST COAST STATES > SUBPART C--WEST COAST GROUND FISH FISHERIES

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours.

Boundaries for some GCAs are defined by straight lines connecting a series of latitude/longitude coordinates. This section provides coordinates for the 10-fm (18-m) through 40-fm (73-m) depth contours.

(a) The 10–fm (18–m) depth contour between the U.S. border with Canada and 46°16' N. lat. is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°23.80' N. lat., 124°44.18' W. long.;
- (2) 48°23.60' N. lat., 124°44.80' W. long.;
- (3) 48°23.45' N. lat., 124°44.80' W. long.;
- (4) 48°23.30' N. lat., 124°44.20' W. long.;
- (5) 48°22.20' N. lat., 124°44.30' W. long.;
- (6) 48°20.25' N. lat., 124°42.20' W. long.;
- (7) 48°12.80' N. lat., 124°43.10' W. long.;
- (8) 48°11.10' N. lat., 124°46.50' W. long.;
- (9) 48°10.00' N. lat., 124°46.50' W. long.;
- (10) 48°08.50' N. lat., 124°44.20' W. long.;
- (11) 47°59.40' N. lat., 124°42.50' W. long.;
- (12) 47°52.60' N. lat., 124°38.80' W. long.;
- (13) 47°51.50' N. lat., 124°34.60' W. long.;
- (14) 47°39.80' N. lat., 124°28.10' W. long.;
- (15) 47°31.70' N. lat., 124°26.30' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (16) 47°25.20' N. lat., 124°24.80' W. long.;
- (17) 47°09.80' N. lat., 124°15.20' W. long.;
- (18) 46°54.40' N. lat., 124°14.80' W. long.;
- (19) 46°48.30' N. lat., 124°10.25' W. long.;
- (20) 46°38.17' N. lat., 124°10.30' W. long.;
- (21) 46°27.20' N. lat., 124°06.50' W. long.; and
- (22) 46°16.00' N. lat., 124°10.00' W. long.

(b) The 20–fm (37–m) depth contour between the U.S. border with Canada and 42° N. lat. is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°23.90' N. lat., 124°44.20' W. long.;
- (2) 48°23.60' N. lat., 124°44.90' W. long.;
- (3) 48°18.60' N. lat., 124°43.60' W. long.;
- (4) 48°18.60' N. lat., 124°48.20' W. long.;
- (5) 48°10.00' N. lat., 124°48.80' W. long.;
- (6) 48°02.40' N. lat., 124°49.30' W. long.;
- (7) 47°37.60' N. lat., 124°34.30' W. long.;
- (8) 47°31.70' N. lat., 124°32.40' W. long.;
- (9) 47°17.90' N. lat., 124°25.00' W. long.;
- (10) 46°58.80' N. lat., 124°18.30' W. long.;
- (11) 46°47.40' N. lat., 124°12.70' W. long.;
- (12) 46°38.17' N. lat., 124°12.40' W. long.;
- (13) 46°16.00' N. lat., 124°11.50' W. long.;
- (14) 46°16.01' N. lat., 124°11.56' W. long.;
- (15) 46°15.09' N. lat., 124°11.33' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (16) 46°11.94' N. lat., 124°08.51' W. long.;
- (17) 46°08.02' N. lat., 124°04.06' W. long.;
- (18) 46°05.05' N. lat., 124°02.13' W. long.;
- (19) 46°02.19' N. lat., 124°01.35' W. long.;
- (20) 45°58.28' N. lat., 124°01.70' W. long.;
- (21) 45°55.64' N. lat., 124°01.16' W. long.;
- (22) 45°52.61' N. lat., 124°00.33' W. long.;
- (23) 45°48.43' N. lat., 124°00.65' W. long.;
- (24) 45°46.59' N. lat., 124°00.79' W. long.;
- (25) 45°46.00' N. lat., 124°00.54' W. long.;
- (26) 45°46.00' N. lat., 124°00.53' W. long.;
- (27) 45°44.75' N. lat., 123°59.92' W. long.;
- (28) 45°44.57' N. lat., 123°59.64' W. long.;
- (29) 45°41.86' N. lat., 123°58.82' W. long.;
- (30) 45°36.40' N. lat., 123°59.42' W. long.;
- (31) 45°34.10' N. lat., 123°59.90' W. long.;
- (32) 45°32.81' N. lat., 124°00.35' W. long.;
- (33) 45°29.87' N. lat., 124°00.98' W. long.;
- (34) 45°27.49' N. lat., 124°00.79' W. long.;
- (35) 45°25.37' N. lat., 124°00.73' W. long.;
- (36) 45°22.06' N. lat., 124°01.66' W. long.;
- (37) 45°17.27' N. lat., 124°00.76' W. long.;
- (38) 45°14.09' N. lat., 124°00.75' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (39) 45°12.50' N. lat., 124°00.53' W. long.;
- (40) 45°11.92' N. lat., 124°01.62' W. long.;
- (41) 45°11.02' N. lat., 124°00.60' W. long.;
- (42) 45°10.08' N. lat., 124°00.58' W. long.;
- (43) 45°05.51' N. lat., 124°02.15' W. long.;
- (44) 45°03.83' N. lat., 124°02.55' W. long.;
- (45) 45°01.03' N. lat., 124°03.22' W. long.;
- (46) 44°57.98' N. lat., 124°04.29' W. long.;
- (47) 44°55.37' N. lat., 124°04.39' W. long.;
- (48) 44°51.56' N. lat., 124°05.54' W. long.;
- (49) 44°45.24' N. lat., 124°06.47' W. long.;
- (50) 44°42.69' N. lat., 124°06.73' W. long.;
- (51) 44°33.86' N. lat., 124°07.43' W. long.;
- (52) 44°29.78' N. lat., 124°07.62' W. long.;
- (53) 44°28.53' N. lat., 124°07.93' W. long.;
- (54) 44°23.71' N. lat., 124°08.30' W. long.;
- (55) 44°21.75' N. lat., 124°08.79' W. long.;
- (56) 44°20.99' N. lat., 124°08.48' W. long.;
- (57) 44°17.29' N. lat., 124°08.82' W. long.;
- (58) 44°11.90' N. lat., 124°09.44' W. long.;
- (59) 44°03.25' N. lat., 124°10.33' W. long.;
- (60) 43°52.69' N. lat., 124°12.01' W. long.;
- (61) 43°42.94' N. lat., 124°13.88' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (62) 43°41.44' N. lat., 124°14.47' W. long.;
- (63) 43°36.60' N. lat., 124°14.92' W. long.;
- (64) 43°29.85' N. lat., 124°17.35' W. long.;
- (65) 43°25.00' N. lat., 124°20.84' W. long.;
- (66) 43°21.61' N. lat., 124°24.09' W. long.;
- (67) 43°20.83' N. lat., 124°24.74' W. long.;
- (68) 43°20.51' N. lat., 124°25.01' W. long.;
- (69) 43°19.33' N. lat., 124°25.43' W. long.;
- (70) 43°16.18' N. lat., 124°26.02' W. long.;
- (71) 43°14.39' N. lat., 124°26.17' W. long.;
- (72) 43°13.94' N. lat., 124°26.72' W. long.;
- (73) 43°13.39' N. lat., 124°26.41' W. long.;
- (74) 43°11.39' N. lat., 124°26.90' W. long.;
- (75) 43°10.06' N. lat., 124°28.24' W. long.;
- (76) 43°07.48' N. lat., 124°28.65' W. long.;
- (77) 43°06.67' N. lat., 124°28.63' W. long.;
- (78) 43°06.43' N. lat., 124°28.22' W. long.;
- (79) 43°03.09' N. lat., 124°28.52' W. long.;
- (80) 42°57.55' N. lat., 124°30.74' W. long.;
- (81) 42°52.91' N. lat., 124°35.03' W. long.;
- (82) 42°51.58' N. lat., 124°36.43' W. long.;
- (83) 42°50.00' N. lat., 124°37.13' W. long.;
- (84) 42°49.85' N. lat., 124°37.20' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (85) 42°46.07' N. lat., 124°36.98' W. long.;
- (86) 42°46.03' N. lat., 124°34.76' W. long.;
- (87) 42°45.37' N. lat., 124°33.59' W. long.;
- (88) 42°43.91' N. lat., 124°32.14' W. long.;
- (89) 42°41.73' N. lat., 124°29.20' W. long.;
- (90) 42°40.50' N. lat., 124°28.95' W. long.;
- (91) 42°40.49' N. lat., 124°28.95' W. long.;
- (92) 42°40.06' N. lat., 124°28.94' W. long.;
- (93) 42°39.74' N. lat., 124°27.80' W. long.;
- (94) 42°37.53' N. lat., 124°26.39' W. long.;
- (95) 42°34.33' N. lat., 124°26.56' W. long.;
- (96) 42°32.81' N. lat., 124°27.55' W. long.;
- (97) 42°31.66' N. lat., 124°29.58' W. long.;
- (98) 42°30.70' N. lat., 124°30.91' W. long.;
- (99) 42°29.20' N. lat., 124°31.27' W. long.;
- (100) 42°27.52' N. lat., 124°30.79' W. long.;
- (101) 42°24.70' N. lat., 124°29.65' W. long.;
- (102) 42°23.93' N. lat., 124°28.60' W. long.;
- (103) 42°19.35' N. lat., 124°27.23' W. long.;
- (104) 42°14.87' N. lat., 124°26.14' W. long.;
- (105) 42°11.85' N. lat., 124°23.78' W. long.;
- (106) 42°08.08' N. lat., 124°22.91' W. long.;
- (107) 42°07.04' N. lat., 124°22.66' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

(108) 42°05.17' N. lat., 124°21.41' W. long.;

(109) 42°04.16' N. lat., 124°20.55' W. long.;

(110) 42°02.12' N. lat., 124°20.51' W. long.;

(111) 42°01.42' N. lat., 124°20.29' W. long.; and

(112) 42°00.00' N. lat., 124°19.61' W. long.

(c) The 25–fm (46–m) depth contour between the Queets River, WA, and 42° N. lat. is defined by straight lines connecting all of the following points in the order stated:

(1) 47°31.70' N. lat., 124°34.70' W. long.;

(2) 47°25.70' N. lat., 124°33.00' W. long.;

(3) 47°12.80' N. lat., 124°26.00' W. long.;

(4) 46°53.00' N. lat., 124°21.00' W. long.;

(5) 46°44.20' N. lat., 124°15.00' W. long.;

(6) 46°38.17' N. lat., 124°13.70' W. long.;

(7) 46°16.00' N. lat., 124°12.50' W. long.;

(8) 46°15.99' N. lat., 124°12.04' W. long.;

(9) 46°13.72' N. lat., 124°11.04' W. long.;

(10) 46°09.50' N. lat., 124°07.62' W. long.;

(11) 46°04.00' N. lat., 124°03.20' W. long.;

(12) 45°57.61' N. lat., 124°01.85' W. long.;

(13) 45°51.73' N. lat., 124°01.06' W. long.;

(14) 45°47.27' N. lat., 124°01.22' W. long.;

(15) 45°46.00' N. lat., 124°00.94' W. long.;

(16) 45°43.19' N. lat., 124°00.32' W. long.;

(17) 45°36.11' N. lat., 124°00.38' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (18) 45°32.95' N. lat., 124°01.38' W. long.;
- (19) 45°27.47' N. lat., 124°01.46' W. long.;
- (20) 45°23.18' N. lat., 124°01.94' W. long.;
- (21) 45°19.04' N. lat., 124°01.29' W. long.;
- (22) 45°16.79' N. lat., 124°01.90' W. long.;
- (23) 45°13.54' N. lat., 124°01.64' W. long.;
- (24) 45°09.56' N. lat., 124°01.94' W. long.;
- (25) 45°06.15' N. lat., 124°02.38' W. long.;
- (26) 45°03.83' N. lat., 124°02.96' W. long.;
- (27) 45°00.77' N. lat., 124°03.72' W. long.;
- (28) 44°49.08' N. lat., 124°06.49' W. long.;
- (29) 44°40.06' N. lat., 124°08.14' W. long.;
- (30) 44°36.64' N. lat., 124°08.51' W. long.;
- (31) 44°29.41' N. lat., 124°09.24' W. long.;
- (32) 44°25.18' N. lat., 124°09.37' W. long.;
- (33) 44°16.34' N. lat., 124°10.30' W. long.;
- (34) 44°12.16' N. lat., 124°10.82' W. long.;
- (35) 44°06.59' N. lat., 124°11.00' W. long.;
- (36) 44°02.09' N. lat., 124°11.24' W. long.;
- (37) 43°57.82' N. lat., 124°11.60' W. long.;
- (38) 43°53.44' N. lat., 124°12.34' W. long.;
- (39) 43°49.19' N. lat., 124°13.08' W. long.;
- (40) 43°45.19' N. lat., 124°13.73' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (41) 43°41.22' N. lat., 124°14.59' W. long.;
- (42) 43°37.52' N. lat., 124°15.05' W. long.;
- (43) 43°33.97' N. lat., 124°16.00' W. long.;
- (44) 43°29.72' N. lat., 124°17.78' W. long.;
- (45) 43°27.63' N. lat., 124°19.11' W. long.;
- (46) 43°20.83' N. lat., 124°25.24' W. long.;
- (47) 43°20.66' N. lat., 124°25.39' W. long.;
- (48) 43°15.57' N. lat., 124°26.86' W. long.;
- (49) 43°06.88' N. lat., 124°29.30' W. long.;
- (50) 43°03.37' N. lat., 124°29.06' W. long.;
- (51) 43°01.03' N. lat., 124°29.41' W. long.;
- (52) 42°56.59' N. lat., 124°31.93' W. long.;
- (53) 42°54.08' N. lat., 124°34.55' W. long.;
- (54) 42°51.16' N. lat., 124°37.02' W. long.;
- (55) 42°50.00' N. lat., 124°37.41' W. long.;
- (56) 42°49.27' N. lat., 124°37.73' W. long.;
- (57) 42°46.02' N. lat., 124°37.54' W. long.;
- (58) 42°45.76' N. lat., 124°35.68' W. long.;
- (59) 42°42.25' N. lat., 124°30.47' W. long.;
- (60) 42°40.51' N. lat., 124°29.00' W. long.;
- (61) 42°40.00' N. lat., 124°29.01' W. long.;
- (62) 42°39.64' N. lat., 124°28.28' W. long.;
- (63) 42°38.80' N. lat., 124°27.57' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

(64) 42°35.42' N. lat., 124°26.77' W. long.;

(65) 42°33.13' N. lat., 124°29.06' W. long.;

(66) 42°31.44' N. lat., 124°30.71' W. long.;

(67) 42°29.03' N. lat., 124°31.71' W. long.;

(68) 42°24.98' N. lat., 124°29.95' W. long.;

(69) 42°20.05' N. lat., 124°28.16' W. long.;

(70) 42°14.24' N. lat., 124°26.03' W. long.;

(71) 42°10.23' N. lat., 124°23.93' W. long.;

(72) 42°06.20' N. lat., 124°22.70' W. long.;

(73) 42°04.66' N. lat., 124°21.49' W. long.;

(74) 42°00.00' N. lat., 124°20.80' W. long.;

(d) The 25-fm (46-m) depth contour between the Queets River, WA, and 42° N. lat., modified to reduce impacts on canary and yelloweye rockfish by shifting the line shoreward in the area between 47°31.70' N. lat. and 46°44.18' N. lat., is defined by straight lines connecting all of the following points in the order stated:

(1) 47°31.70' N. lat., 124°34.66' W. long.;

(2) 47°25.67' N. lat., 124°32.78' W. long.;

(3) 47°12.82' N. lat., 124°26.00' W. long.;

(4) 46°52.94' N. lat., 124°18.94' W. long.;

(5) 46°44.18' N. lat., 124°14.89' W. long.;

(6) 46°38.17' N. lat., 124°13.70' W. long.;

(7) 46°16.00' N. lat., 124°12.50' W. long.;

(8) 46°15.99' N. lat., 124°12.04' W. long.;

(9) 46°13.72' N. lat., 124°11.04' W. long.;

(10) 46°09.50' N. lat., 124°07.62' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (11) 46°04.00' N. lat., 124°03.20' W. long.;
- (12) 45°57.61' N. lat., 124°01.85' W. long.;
- (13) 45°51.73' N. lat., 124°01.06' W. long.;
- (14) 45°47.27' N. lat., 124°01.22' W. long.;
- (15) 45°46.00' N. lat., 124°00.94' W. long.;
- (16) 45°43.19' N. lat., 124°00.32' W. long.;
- (17) 45°36.11' N. lat., 124°00.38' W. long.;
- (18) 45°32.95' N. lat., 124°01.38' W. long.;
- (19) 45°27.47' N. lat., 124°01.46' W. long.;
- (20) 45°23.18' N. lat., 124°01.94' W. long.;
- (21) 45°19.04' N. lat., 124°01.29' W. long.;
- (22) 45°16.79' N. lat., 124°01.90' W. long.;
- (23) 45°13.54' N. lat., 124°01.64' W. long.;
- (24) 45°09.56' N. lat., 124°01.94' W. long.;
- (25) 45°06.15' N. lat., 124°02.38' W. long.;
- (26) 45°03.83' N. lat., 124°02.96' W. long.;
- (27) 45°00.77' N. lat., 124°03.72' W. long.;
- (28) 44°49.08' N. lat., 124°06.49' W. long.;
- (29) 44°40.06' N. lat., 124°08.14' W. long.;
- (30) 44°36.64' N. lat., 124°08.51' W. long.;
- (31) 44°29.41' N. lat., 124°09.24' W. long.;
- (32) 44°25.18' N. lat., 124°09.37' W. long.;
- (33) 44°16.34' N. lat., 124°10.30' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (34) 44°12.16' N. lat., 124°10.82' W. long.;
- (35) 44°06.59' N. lat., 124°11.00' W. long.;
- (36) 44°02.09' N. lat., 124°11.24' W. long.;
- (37) 43°57.82' N. lat., 124°11.60' W. long.;
- (38) 43°53.44' N. lat., 124°12.34' W. long.;
- (39) 43°49.19' N. lat., 124°13.08' W. long.;
- (40) 43°45.19' N. lat., 124°13.73' W. long.;
- (41) 43°41.22' N. lat., 124°14.59' W. long.;
- (42) 43°37.52' N. lat., 124°15.05' W. long.;
- (43) 43°33.97' N. lat., 124°16.00' W. long.;
- (44) 43°29.72' N. lat., 124°17.78' W. long.;
- (45) 43°27.63' N. lat., 124°19.11' W. long.;
- (46) 43°20.83' N. lat., 124°25.24' W. long.;
- (47) 43°20.66' N. lat., 124°25.39' W. long.;
- (48) 43°15.57' N. lat., 124°26.86' W. long.;
- (49) 43°06.88' N. lat., 124°29.30' W. long.;
- (50) 43°03.37' N. lat., 124°29.06' W. long.;
- (51) 43°01.03' N. lat., 124°29.41' W. long.;
- (52) 42°56.59' N. lat., 124°31.93' W. long.;
- (53) 42°54.08' N. lat., 124°34.55' W. long.;
- (54) 42°51.16' N. lat., 124°37.02' W. long.;
- (55) 42°50.00' N. lat., 124°36.41' W. long.;
- (56) 42°49.27' N. lat., 124°37.73' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (57) 42°46.02' N. lat., 124°37.54' W. long.;
- (58) 42°45.76' N. lat., 124°35.68' W. long.;
- (59) 42°42.25' N. lat., 124°30.47' W. long.;
- (60) 42°40.51' N. lat., 124°29.00' W. long.;
- (61) 42°40.00' N. lat., 124°29.01' W. long.;
- (62) 42°39.64' N. lat., 124°28.28' W. long.;
- (63) 42°38.80' N. lat., 124°27.57' W. long.;
- (64) 42°35.42' N. lat., 124°26.77' W. long.;
- (65) 42°33.13' N. lat., 124°29.06' W. long.;
- (66) 42°31.44' N. lat., 124°30.71' W. long.;
- (67) 42°29.03' N. lat., 124°31.71' W. long.;
- (68) 42°24.98' N. lat., 124°29.95' W. long.;
- (69) 42°20.05' N. lat., 124°28.16' W. long.;
- (70) 42°14.24' N. lat., 124°26.03' W. long.;
- (71) 42°10.23' N. lat., 124°23.93' W. long.;
- (72) 42°06.20' N. lat., 124°22.70' W. long.;
- (73) 42°04.66' N. lat., 124°21.49' W. long.; and
- (74) 42°00.00' N. lat., 124°20.80' W. long.

(e) The 30–fm (55–m) depth contour between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°24.79' N. lat., 124°44.07' W. long.;
- (2) 48°24.80' N. lat., 124°44.74' W. long.;
- (3) 48°23.94' N. lat., 124°44.70' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (4) 48°23.51' N. lat., 124°45.01' W. long.;
- (5) 48°22.59' N. lat., 124°44.97' W. long.;
- (6) 48°21.75' N. lat., 124°45.26' W. long.;
- (7) 48°21.23' N. lat., 124°47.78' W. long.;
- (8) 48°20.32' N. lat., 124°49.53' W. long.;
- (9) 48°16.72' N. lat., 124°51.58' W. long.;
- (10) 48°10.00' N. lat., 124°52.58' W. long.;
- (11) 48°05.63' N. lat., 124°52.91' W. long.;
- (12) 47°53.37' N. lat., 124°47.37' W. long.;
- (13) 47°40.28' N. lat., 124°40.07' W. long.;
- (14) 47°31.70' N. lat., 124°37.03' W. long.;
- (15) 47°25.67' N. lat., 124°34.79' W. long.;
- (16) 47°12.82' N. lat., 124°29.12' W. long.;
- (17) 46°52.94' N. lat., 124°22.58' W. long.;
- (18) 46°44.18' N. lat., 124°18.00' W. long.;
- (19) 46°38.17' N. lat., 124°15.88' W. long.;
- (20) 46°29.53' N. lat., 124°15.89' W. long.;
- (21) 46°19.27' N. lat., 124°14.15' W. long.;
- (22) 46°16.00' N. lat., 124°13.04' W. long.;
- (23) 46°07.00' N. lat., 124°07.01' W. long.;
- (24) 45°55.95' N. lat., 124°02.23' W. long.;
- (25) 45°54.53' N. lat., 124°02.57' W. long.;
- (26) 45°50.65' N. lat., 124°01.62' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (27) 45°48.20' N. lat., 124°02.16' W. long.;
- (28) 45°46.00' N. lat., 124°01.86' W. long.;
- (29) 45°43.46' N. lat., 124°01.28' W. long.;
- (30) 45°40.48' N. lat., 124°01.03' W. long.;
- (31) 45°39.04' N. lat., 124°01.68' W. long.;
- (32) 45°35.48' N. lat., 124°01.90' W. long.;
- (33) 45°29.81' N. lat., 124°02.45' W. long.;
- (34) 45°27.97' N. lat., 124°01.90' W. long.;
- (35) 45°27.22' N. lat., 124°02.66' W. long.;
- (36) 45°24.20' N. lat., 124°02.94' W. long.;
- (37) 45°20.60' N. lat., 124°01.74' W. long.;
- (38) 45°20.25' N. lat., 124°01.85' W. long.;
- (39) 45°16.44' N. lat., 124°03.22' W. long.;
- (40) 45°13.63' N. lat., 124°02.69' W. long.;
- (41) 45°11.05' N. lat., 124°03.59' W. long.;
- (42) 45°08.55' N. lat., 124°03.47' W. long.;
- (43) 45°03.82' N. lat., 124°04.43' W. long.;
- (44) 45°02.81' N. lat., 124°04.64' W. long.;
- (45) 44°58.06' N. lat., 124°05.03' W. long.;
- (46) 44°53.97' N. lat., 124°06.92' W. long.;
- (47) 44°48.89' N. lat., 124°07.04' W. long.;
- (48) 44°46.94' N. lat., 124°08.25' W. long.;
- (49) 44°42.72' N. lat., 124°08.98' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (50) 44°38.16' N. lat., 124°11.48' W. long.;
- (51) 44°33.38' N. lat., 124°11.54' W. long.;
- (52) 44°28.51' N. lat., 124°12.04' W. long.;
- (53) 44°27.65' N. lat., 124°12.56' W. long.;
- (54) 44°19.67' N. lat., 124°12.37' W. long.;
- (55) 44°10.79' N. lat., 124°12.22' W. long.;
- (56) 44°09.22' N. lat., 124°12.28' W. long.;
- (57) 44°08.30' N. lat., 124°12.30' W. long.;
- (58) 44°00.22' N. lat., 124°12.80' W. long.;
- (59) 43°51.56' N. lat., 124°13.18' W. long.;
- (60) 43°44.26' N. lat., 124°14.50' W. long.;
- (61) 43°33.82' N. lat., 124°16.28' W. long.;
- (62) 43°28.66' N. lat., 124°18.72' W. long.;
- (63) 43°23.12' N. lat., 124°24.04' W. long.;
- (64) 43°20.83' N. lat., 124°25.67' W. long.;
- (65) 43°20.48' N. lat., 124°25.90' W. long.;
- (66) 43°16.41' N. lat., 124°27.52' W. long.;
- (67) 43°14.23' N. lat., 124°29.28' W. long.;
- (68) 43°14.03' N. lat., 124°28.31' W. long.;
- (69) 43°11.92' N. lat., 124°28.26' W. long.;
- (70) 43°11.02' N. lat., 124°29.11' W. long.;
- (71) 43°10.13' N. lat., 124°29.15' W. long.;
- (72) 43°09.26' N. lat., 124°31.03' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (73) 43°07.73' N. lat., 124°30.92' W. long.;
- (74) 43°05.93' N. lat., 124°29.64' W. long.;
- (75) 43°01.59' N. lat., 124°30.64' W. long.;
- (76) 42°59.72' N. lat., 124°31.16' W. long.;
- (77) 42°53.75' N. lat., 124°36.09' W. long.;
- (78) 42°50.00' N. lat., 124°38.39' W. long.;
- (79) 42°49.37' N. lat., 124°38.81' W. long.;
- (80) 42°46.42' N. lat., 124°37.69' W. long.;
- (81) 42°46.07' N. lat., 124°38.56' W. long.;
- (82) 42°45.29' N. lat., 124°37.95' W. long.;
- (83) 42°45.61' N. lat., 124°36.87' W. long.;
- (84) 42°44.27' N. lat., 124°33.64' W. long.;
- (85) 42°42.75' N. lat., 124°31.84' W. long.;
- (86) 42°40.50' N. lat., 124°29.67' W. long.;
- (87) 42°40.04' N. lat., 124°29.20' W. long.;
- (88) 42°38.09' N. lat., 124°28.39' W. long.;
- (89) 42°36.73' N. lat., 124°27.54' W. long.;
- (90) 42°36.56' N. lat., 124°28.40' W. long.;
- (91) 42°35.77' N. lat., 124°28.79' W. long.;
- (92) 42°34.03' N. lat., 124°29.98' W. long.;
- (93) 42°34.19' N. lat., 124°30.58' W. long.;
- (94) 42°31.27' N. lat., 124°32.24' W. long.;
- (95) 42°27.07' N. lat., 124°32.53' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (96) 42°24.21' N. lat., 124°31.23' W. long.;
- (97) 42°20.47' N. lat., 124°28.87' W. long.;
- (98) 42°14.60' N. lat., 124°26.80' W. long.;
- (99) 42°13.67' N. lat., 124°26.25' W. long.;
- (100) 42°10.90' N. lat., 124°24.56' W. long.;
- (101) 42°07.04' N. lat., 124°23.35' W. long.;
- (102) 42°02.16' N. lat., 124°22.59' W. long.;
- (103) 42°00.00' N. lat., 124°21.81' W. long.;
- (104) 41°55.75' N. lat., 124°20.72' W. long.;
- (105) 41°50.93' N. lat., 124°23.76' W. long.;
- (106) 41°42.53' N. lat., 124°16.47' W. long.;
- (107) 41°37.20' N. lat., 124°17.05' W. long.;
- (108) 41°24.58' N. lat., 124°10.51' W. long.;
- (109) 41°20.73' N. lat., 124°11.73' W. long.;
- (110) 41°17.59' N. lat., 124°10.66' W. long.;
- (111) 41°04.54' N. lat., 124°14.47' W. long.;
- (112) 40°54.26' N. lat., 124°13.90' W. long.;
- (113) 40°40.31' N. lat., 124°26.24' W. long.;
- (114) 40°34.00' N. lat., 124°27.39' W. long.;
- (115) 40°30.00' N. lat., 124°31.32' W. long.;
- (116) 40°28.89' N. lat., 124°32.43' W. long.;
- (117) 40°24.77' N. lat., 124°29.51' W. long.;
- (118) 40°22.47' N. lat., 124°24.12' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (119) 40°19.73' N. lat., 124°23.59' W. long.;
- (120) 40°18.64' N. lat., 124°21.89' W. long.;
- (121) 40°17.67' N. lat., 124°23.07' W. long.;
- (122) 40°15.58' N. lat., 124°23.61' W. long.;
- (123) 40°13.42' N. lat., 124°22.94' W. long.;
- (124) 40°10.00' N. lat., 124°16.65' W. long.;
- (125) 40°09.46' N. lat., 124°15.28' W. long.;
- (126) 40°08.89' N. lat., 124°15.24' W. long.;
- (127) 40°06.40' N. lat., 124°10.97' W. long.;
- (128) 40°06.08' N. lat., 124°09.34' W. long.;
- (129) 40°06.64' N. lat., 124°08.00' W. long.;
- (130) 40°05.08' N. lat., 124°07.57' W. long.;
- (131) 40°04.29' N. lat., 124°08.12' W. long.;
- (132) 40°00.61' N. lat., 124°07.35' W. long.;
- (133) 39°58.60' N. lat., 124°05.51' W. long.;
- (134) 39°54.89' N. lat., 124°04.67' W. long.;
- (135) 39°53.01' N. lat., 124°02.33' W. long.;
- (136) 39°53.20' N. lat., 123°58.18' W. long.;
- (137) 39°48.45' N. lat., 123°53.21' W. long.;
- (138) 39°43.89' N. lat., 123°51.75' W. long.;
- (139) 39°39.60' N. lat., 123°49.14' W. long.;
- (140) 39°37.50' N. lat., 123°49.20' W. long.;
- (141) 39°34.43' N. lat., 123°48.48' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (142) 39°30.63' N. lat., 123°49.71' W. long.;
- (143) 39°21.25' N. lat., 123°50.54' W. long.;
- (144) 39°16.88' N. lat., 123°49.29' W. long.;
- (145) 39°11.06' N. lat., 123°47.16' W. long.;
- (146) 39°10.35' N. lat., 123°46.75' W. long.;
- (147) 39°08.87' N. lat., 123°46.24' W. long.;
- (148) 39°03.79' N. lat., 123°43.91' W. long.;
- (149) 38°59.65' N. lat., 123°45.94' W. long.;
- (150) 38°57.50' N. lat., 123°46.28' W. long.;
- (151) 38°56.80' N. lat., 123°46.48' W. long.;
- (152) 38°51.16' N. lat., 123°41.48' W. long.;
- (153) 38°45.77' N. lat., 123°35.14' W. long.;
- (154) 38°42.21' N. lat., 123°28.17' W. long.;
- (155) 38°34.05' N. lat., 123°20.96' W. long.;
- (156) 38°22.47' N. lat., 123°07.48' W. long.;
- (157) 38°16.52' N. lat., 123°05.62' W. long.;
- (158) 38°14.42' N. lat., 123°01.91' W. long.;
- (159) 38°08.24' N. lat., 122°59.79' W. long.;
- (160) 38°02.69' N. lat., 123°01.96' W. long.;
- (161) 38°00.00' N. lat., 123°04.75' W. long.;
- (162) 37°58.41' N. lat., 123°02.93' W. long.;
- (163) 37°58.25' N. lat., 122°56.49' W. long.;
- (164) 37°50.30' N. lat., 122°52.23' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (165) 37°43.36' N. lat., 123°04.18' W. long.;
- (166) 37°40.77' N. lat., 123°01.62' W. long.;
- (167) 37°40.13' N. lat., 122°57.30' W. long.;
- (168) 37°39.85.' N. lat., 122°49.90' W. long.;
- (169) 37°35.67' N. lat., 122°44.20' W. long.;
- (170) 37°29.62' N. lat., 122°36.00' W. long.;
- (171) 37°22.38' N. lat., 122°31.66' W. long.;
- (172) 37°13.86' N. lat., 122°28.27' W. long.;
- (173) 37°11.00' N. lat., 122°26.50' W. long.;
- (174) 37°08.10' N. lat., 122°24.75' W. long.;
- (175) 37°07.00' N. lat., 122°23.60' W. long.;
- (176) 37°05.84' N. lat., 122°22.47' W. long.;
- (177) 36°58.77' N. lat., 122°13.03' W. long.;
- (178) 36°53.74' N. lat., 122°03.39' W. long.;
- (179) 36°52.71' N. lat., 122°00.14' W. long.;
- (180) 36°52.51' N. lat., 121°56.77' W. long.;
- (181) 36°49.44' N. lat., 121°49.63' W. long.;
- (182) 36°48.01' N. lat., 121°49.92' W. long.;
- (183) 36°48.25' N. lat., 121°47.66' W. long.;
- (184) 36°46.26' N. lat., 121°51.27' W. long.;
- (185) 36°39.14' N. lat., 121°52.05' W. long.;
- (186) 36°38.00' N. lat., 121°53.57' W. long.;
- (187) 36°39.14' N. lat., 121°55.45' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (188) 36°38.50' N. lat., 121°57.90' W. long.;
- (189) 36°36.75' N. lat., 121°59.44' W. long.;
- (190) 36°34.97' N. lat., 121°59.37' W. long.;
- (191) 36°33.07' N. lat., 121°58.32' W. long.;
- (192) 36°33.20' N. lat., 121°57.50' W. long.;
- (193) 36°32.04' N. lat., 121°55.98' W. long.;
- (194) 36°31.61' N. lat., 121°55.72' W. long.;
- (195) 36°31.59' N. lat., 121°57.12' W. long.;
- (196) 36°31.52' N. lat., 121°57.57' W. long.;
- (197) 36°30.88' N. lat., 121°57.90' W. long.;
- (198) 36°30.25' N. lat., 121°57.37' W. long.;
- (199) 36°29.47' N. lat., 121°57.55' W. long.;
- (200) 36°26.72' N. lat., 121°56.40' W. long.;
- (201) 36°24.33' N. lat., 121°56.00' W. long.;
- (202) 36°23.36' N. lat., 121°55.45' W. long.;
- (203) 36°18.86' N. lat., 121°56.15' W. long.;
- (204) 36°16.21' N. lat., 121°54.81' W. long.;
- (205) 36°15.30' N. lat., 121°53.79' W. long.;
- (206) 36°12.04' N. lat., 121°45.38' W. long.;
- (207) 36°11.87' N. lat., 121°44.45' W. long.;
- (208) 36°12.13' N. lat., 121°44.25' W. long.;
- (209) 36°11.89' N. lat., 121°43.65' W. long.;
- (210) 36°10.56' N. lat., 121°42.62' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (211) 36°09.90' N. lat., 121°41.57' W. long.;
- (212) 36°08.14' N. lat., 121°40.44' W. long.;
- (213) 36°06.69' N. lat., 121°38.79' W. long.;
- (214) 36°05.85' N. lat., 121°38.47' W. long.;
- (215) 36°03.08' N. lat., 121°36.25' W. long.;
- (216) 36°02.92' N. lat., 121°35.89' W. long.;
- (217) 36°01.53' N. lat., 121°36.13' W. long.;
- (218) 36°00.59' N. lat., 121°35.40' W. long.;
- (219) 36°00.00' N. lat., 121°34.10' W. long.;
- (220) 35°59.93' N. lat., 121°33.81' W. long.;
- (221) 35°59.69' N. lat., 121°31.84' W. long.;
- (222) 35°58.59' N. lat., 121°30.30' W. long.;
- (223) 35°54.02' N. lat., 121°29.71' W. long.;
- (224) 35°51.54' N. lat., 121°27.67' W. long.;
- (225) 35°50.42' N. lat., 121°25.79' W. long.;
- (226) 35°48.37' N. lat., 121°24.29' W. long.;
- (227) 35°47.02' N. lat., 121°22.46' W. long.;
- (228) 35°42.28' N. lat., 121°21.20' W. long.;
- (229) 35°41.57' N. lat., 121°21.82' W. long.;
- (230) 35°39.24' N. lat., 121°18.84' W. long.;
- (231) 35°35.14' N. lat., 121°10.45' W. long.;
- (232) 35°30.11' N. lat., 121°05.59' W. long.;
- (233) 35°25.86' N. lat., 121°00.07' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (234) 35°22.82' N. lat., 120°54.68' W. long.;
- (235) 35°17.96' N. lat., 120°55.54' W. long.;
- (236) 35°14.83' N. lat., 120°55.42' W. long.;
- (237) 35°08.87' N. lat., 120°50.22' W. long.;
- (238) 35°05.55' N. lat., 120°44.89' W. long.;
- (239) 35°02.91' N. lat., 120°43.94' W. long.;
- (240) 34°53.80' N. lat., 120°43.94' W. long.;
- (241) 34°34.89' N. lat., 120°41.92' W. long.;
- (242) 34°32.48' N. lat., 120°40.05' W. long.;
- (243) 34°30.12' N. lat., 120°32.81' W. long.;
- (244) 34°27.00' N. lat., 120°30.46' W. long.;
- (245) 34°27.00' N. lat., 120°30.31' W. long.;
- (246) 34°25.84' N. lat., 120°27.40' W. long.;
- (247) 34°25.16' N. lat., 120°20.18' W. long.;
- (248) 34°25.88' N. lat., 120°18.24' W. long.;
- (249) 34°27.26' N. lat., 120°12.47' W. long.;
- (250) 34°26.27' N. lat., 120°02.22' W. long.;
- (251) 34°23.41' N. lat., 119°53.40' W. long.;
- (252) 34°23.33' N. lat., 119°48.74' W. long.;
- (253) 34°22.31' N. lat., 119°41.36' W. long.;
- (254) 34°21.72' N. lat., 119°40.14' W. long.;
- (255) 34°21.25' N. lat., 119°41.18' W. long.;
- (256) 34°20.25' N. lat., 119°39.03' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (257) 34°19.87' N. lat., 119°33.65' W. long.;
- (258) 34°18.67' N. lat., 119°30.16' W. long.;
- (259) 34°16.95' N. lat., 119°27.90' W. long.;
- (260) 34°13.02' N. lat., 119°26.99' W. long.;
- (261) 34°08.62' N. lat., 119°20.89' W. long.;
- (262) 34°06.95' N. lat., 119°17.68' W. long.;
- (263) 34°06.13' N lat., 119°15.26' W long.;
- (264) 34°08.42' N. lat., 119°13.11' W. long.;
- (265) 34°05.23' N. lat., 119°13.34' W. long.;
- (266) 34°04.98' N. lat., 119°11.39' W. long.;
- (267) 34°04.55' N. lat., 119°11.09' W. long.;
- (268) 34°04.15' N. lat., 119°09.35' W. long.;
- (269) 34°04.89' N. lat., 119°07.86' W. long.;
- (270) 34°04.08' N. lat., 119°07.33' W. long.;
- (271) 34°04.10' N. lat., 119°06.89' W. long.;
- (272) 34°05.08' N. lat., 119°07.02' W. long.;
- (273) 34°05.27' N. lat., 119°04.95' W. long.;
- (274) 34°04.66' N lat., 119°04.51' W long.;
- (275) 34°02.26' N. lat., 118°59.88' W. long.;
- (276) 34°00.94' N. lat., 118°51.65' W. long.;
- (277) 33°59.77' N. lat., 118°49.26' W. long.;
- (278) 34°00.04' N. lat., 118°48.92' W. long.;
- (279) 33°59.65' N. lat., 118°48.43' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (280) 33°59.78' N lat., 118°47.26' W long.;
- (281) 33°59.80' N. lat., 118°45.89' W. long.;
- (282) 34°00.21' N. lat., 118°37.64' W. long.;
- (283) 33°59.26' N. lat., 118°34.58' W. long.;
- (284) 33°58.07' N. lat., 118°33.36' W. long.;
- (285) 33°53.76' N. lat., 118°30.14' W. long.;
- (286) 33°51.00' N. lat., 118°25.19' W. long.;
- (287) 33°50.29' N lat., 118°24.58' W long.;
- (288) 33°50.16' N. lat., 118°23.77' W. long.;
- (289) 33°48.80' N. lat., 118°25.31' W. long.;
- (290) 33°47.07' N. lat., 118°27.07' W. long.;
- (291) 33°46.12' N. lat., 118°26.87' W. long.;
- (292) 33°44.15' N. lat., 118°25.15' W. long.;
- (293) 33°43.54' N. lat., 118°23.02' W. long.;
- (294) 33°41.35' N. lat., 118°18.86' W. long.;
- (295) 33°39.96' N. lat., 118°17.37' W. long.;
- (296) 33°40.12' N. lat., 118°16.33' W. long.;
- (297) 33°39.28' N. lat., 118°16.21' W. long.;
- (298) 33°38.04' N. lat., 118°14.86' W. long.;
- (299) 33°36.57' N. lat., 118°14.67' W. long.;
- (300) 33°34.93' N. lat., 118°10.94' W. long.;
- (301) 33°35.14' N. lat., 118°08.61' W. long.;
- (302) 33°35.69' N. lat., 118°07.68' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (303) 33°36.21' N. lat., 118°07.53' W. long.;
- (304) 33°36.43' N. lat., 118°06.73' W. long.;
- (305) 33°36.05' N. lat., 118°06.15' W. long.;
- (306) 33°36.32' N. lat., 118°03.91' W. long.;
- (307) 33°35.26' N. lat., 118°02.55' W. long.;
- (308) 33°34.62' N. lat., 118°00.04' W. long.;
- (309) 33°34.80' N. lat., 117°57.73' W. long.;
- (310) 33°35.57' N. lat., 117°56.62' W. long.;
- (311) 33°35.46' N. lat., 117°55.99' W. long.;
- (312) 33°35.98' N. lat., 117°55.99' W. long.;
- (313) 33°35.46' N. lat., 117°55.38' W. long.;
- (314) 33°35.21' N. lat., 117°53.46' W. long.;
- (315) 33°33.61' N. lat., 117°50.45' W. long.;
- (316) 33°31.41' N. lat., 117°47.28' W. long.;
- (317) 33°27.54' N. lat., 117°44.36' W. long.;
- (318) 33°26.63' N. lat., 117°43.17' W. long.;
- (319) 33°25.21' N. lat., 117°40.90' W. long.;
- (320) 33°20.33' N. lat., 117°35.99' W. long.;
- (321) 33°16.35' N. lat., 117°31.51' W. long.;
- (322) 33°11.53' N. lat., 117°26.81' W. long.;
- (323) 33°07.59' N. lat., 117°21.13' W. long.;
- (324) 33°02.21' N. lat., 117°19.05' W. long.;
- (325) 32°56.55' N. lat., 117°17.70' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (326) 32°54.61' N. lat., 117°16.60' W. long.;
- (327) 32°52.32' N. lat., 117°15.97' W. long.;
- (328) 32°51.48' N. lat., 117°16.15' W. long.;
- (329) 32°51.85' N. lat., 117°17.26' W. long.;
- (330) 32°51.55' N. lat., 117°19.01' W. long.;
- (331) 32°49.55' N. lat., 117°19.63' W. long.;
- (332) 32°46.71' N. lat., 117°18.32' W. long.;
- (333) 32°36.35' N. lat., 117°15.68' W. long.; and
- (334) 32°32.85' N. lat., 117°15.44' W. long.

(f) The 30 fm (55 m) depth contour around the Farallon Islands off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 37°46.73' N. lat., 123°06.37' W. long.;
- (2) 37°45.79' N. lat., 123°07.91' W. long.;
- (3) 37°45.28' N. lat., 123°07.75' W. long.;
- (4) 37°44.98' N. lat., 123°07.11' W. long.;
- (5) 37°45.51' N. lat., 123°06.26' W. long.;
- (6) 37°45.14' N. lat., 123°05.41' W. long.;
- (7) 37°45.31' N. lat., 123°04.82' W. long.;
- (8) 37°46.11' N. lat., 123°05.23' W. long.;
- (9) 37°46.44' N. lat., 123°05.63' W. long.; and
- (10) 37°46.73' N. lat., 123°06.37' W. long.

(g) The 30 fm (55 m) depth contour around Noon Day Rock off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 37°47.83' N. lat., 123°10.83' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (2) 37°47.51' N. lat., 123°11.19' W. long.;
- (3) 37°47.33' N. lat., 123°10.68' W. long.;
- (4) 37°47.02' N. lat., 123°10.59' W. long.;
- (5) 37°47.21' N. lat., 123°09.85' W. long.;
- (6) 37°47.56' N. lat., 123°09.72' W. long.;
- (7) 37°47.87' N. lat., 123°10.26' W. long.; and
- (8) 37°47.83' N. lat., 123°10.83' W. long.

(h) The 30 fm (55–m) depth contour around the northern Channel Islands of the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 34°00.98' N. lat., 119°20.46' W. long.;
- (2) 34°00.53' N. lat., 119°20.98' W. long.;
- (3) 34°00.17' N. lat., 119°21.83' W. long.;
- (4) 33°59.65' N. lat., 119°24.45' W. long.;
- (5) 33°59.68' N. lat., 119°25.20' W. long.;
- (6) 33°59.95' N. lat., 119°26.25' W. long.;
- (7) 33°59.87' N. lat., 119°27.27' W. long.;
- (8) 33°59.55' N. lat., 119°28.02' W. long.;
- (9) 33°58.63' N. lat., 119°36.48' W. long.;
- (10) 33°57.62' N. lat., 119°41.13' W. long.;
- (11) 33°57.00' N. lat., 119°42.20' W. long.;
- (12) 33°56.93' N. lat., 119°48.00' W. long.;
- (13) 33°56.75' N. lat., 119°49.13' W. long.;
- (14) 33°58.54' N. lat., 119°52.80' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (15) 33°59.95' N. lat., 119°54.49' W. long.;
- (16) 33°59.83' N. lat., 119°56.00' W. long.;
- (17) 33°59.18' N. lat., 119°57.17' W. long.;
- (18) 33°57.83' N. lat., 119°56.74' W. long.;
- (19) 33°55.71' N. lat., 119°56.89' W. long.;
- (20) 33°53.89' N. lat., 119°57.68' W. long.;
- (21) 33°52.93' N. lat., 119°59.80' W. long.;
- (22) 33°52.79' N. lat., 120°01.81' W. long.;
- (23) 33°52.51' N. lat., 120°03.08' W. long.;
- (24) 33°53.12' N. lat., 120°04.88' W. long.;
- (25) 33°53.12' N. lat., 120°05.80' W. long.;
- (26) 33°52.94' N. lat., 120°06.50' W. long.;
- (27) 33°54.03' N. lat., 120°10.00' W. long.;
- (28) 33°54.58' N. lat., 120°11.82' W. long.;
- (29) 33°57.08' N. lat., 120°14.58' W. long.;
- (30) 33°59.50' N. lat., 120°16.72' W. long.;
- (31) 33°59.63' N. lat., 120°17.88' W. long.;
- (32) 34°00.30' N. lat., 120°19.14' W. long.;
- (33) 34°00.02' N. lat., 120°19.68' W. long.;
- (34) 34°00.08' N. lat., 120°21.73' W. long.;
- (35) 34°00.94' N. lat., 120°24.82' W. long.;
- (36) 34°01.09' N. lat., 120°27.29' W. long.;
- (37) 34°00.96' N. lat., 120°28.09' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (38) 34°01.56' N. lat., 120°28.71' W. long.;
- (39) 34°01.80' N. lat., 120°28.31' W. long.;
- (40) 34°03.60' N. lat., 120°28.87' W. long.;
- (41) 34°05.20' N. lat., 120°29.38' W. long.;
- (42) 34°05.35' N. lat., 120°28.20' W. long.;
- (43) 34°05.30' N. lat., 120°27.33' W. long.;
- (44) 34°05.65' N. lat., 120°26.79' W. long.;
- (45) 34°05.69' N. lat., 120°25.82' W. long.;
- (46) 34°07.24' N. lat., 120°24.98' W. long.;
- (47) 34°06.00' N. lat., 120°23.30' W. long.;
- (48) 34°05.64' N. lat., 120°21.44' W. long.;
- (49) 34°03.61' N. lat., 120°18.40' W. long.;
- (50) 34°03.25' N. lat., 120°16.64' W. long.;
- (51) 34°04.33' N. lat., 120°14.22' W. long.;
- (52) 34°04.11' N. lat., 120°11.17' W. long.;
- (53) 34°03.72' N. lat., 120°09.93' W. long.;
- (54) 34°03.81' N. lat., 120°08.96' W. long.;
- (55) 34°03.36' N. lat., 120°06.52' W. long.;
- (56) 34°04.80' N. lat., 120°04.00' W. long.;
- (57) 34°03.48' N. lat., 120°01.75' W. long.;
- (58) 34°04.00' N. lat., 120°01.00' W. long.;
- (59) 34°03.99' N. lat., 120°00.15' W. long.;
- (60) 34°03.51' N. lat., 119°59.42' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (61) 34°03.79' N. lat., 119°58.15' W. long.;
- (62) 34°04.72' N. lat., 119°57.61' W. long.;
- (63) 34°05.14' N. lat., 119°55.17' W. long.;
- (64) 34°04.66' N. lat., 119°51.60' W. long.;
- (65) 34°03.79' N. lat., 119°48.86' W. long.;
- (66) 34°03.79' N. lat., 119°45.46' W. long.;
- (67) 34°03.27' N. lat., 119°44.17' W. long.;
- (68) 34°03.29' N. lat., 119°43.30' W. long.;
- (69) 34°01.71' N. lat., 119°40.83' W. long.;
- (70) 34°01.74' N. lat., 119°37.92' W. long.;
- (71) 34°02.07' N. lat., 119°37.17' W. long.;
- (72) 34°02.93' N. lat., 119°36.52' W. long.;
- (73) 34°03.48' N. lat., 119°35.50' W. long.;
- (74) 34°03.56' N. lat., 119°32.80' W. long.;
- (75) 34°02.72' N. lat., 119°31.84' W. long.;
- (76) 34°02.20' N. lat., 119°30.53' W. long.;
- (77) 34°01.49' N. lat., 119°30.20' W. long.;
- (78) 34°00.66' N. lat., 119°28.62' W. long.;
- (79) 34°00.66' N. lat., 119°27.57' W. long.;
- (80) 34°01.41' N. lat., 119°26.91' W. long.;
- (81) 34°00.91' N. lat., 119°24.28' W. long.;
- (82) 34°01.51' N. lat., 119°22.06' W. long.;
- (83) 34°01.41' N. lat., 119°20.61' W. long.; and

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

(84) 34°00.98' N. lat., 119°20.46' W. long.

(i) The 30 fm (55 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

(1) 33°02.98' N lat., 118°37.64' W long.;

(2) 33°02.72' N. lat., 118°38.12' W. long.;

(3) 33°02.18' N. lat., 118°37.46' W. long.;

(4) 33°00.66' N. lat., 118°37.36' W. long.;

(5) 33°00.08' N. lat., 118°36.94' W. long.;

(6) 33°00.11' N. lat., 118°36.00' W. long.;

(7) 32°58.02' N. lat., 118°35.41' W. long.;

(8) 32°56.00' N. lat., 118°33.59' W. long.;

(9) 32°54.79' N lat., 118°33.34' W long.;

(10) 32°53.97' N. lat., 118°32.45' W. long.;

(11) 32°51.18' N. lat., 118°30.83' W. long.;

(12) 32°50.00' N. lat., 118°29.68' W. long.;

(13) 32°49.72' N. lat., 118°28.33' W. long.;

(14) 32°48.05' N lat., 118°26.81' W long.;

(15) 32°47.30' N. lat., 118°25.73' W. long.;

(16) 32°47.28' N. lat., 118°24.83' W. long.;

(17) 32°48.12' N. lat., 118°24.33' W. long.;

(18) 32°48.74' N. lat., 118°23.39' W. long.;

(19) 32°48.69' N. lat., 118°21.75' W. long.;

(20) 32°49.04' N lat., 118°20.71' W long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (21) 32°50.28' N. lat., 118°21.90' W. long.;
- (22) 32°51.73' N. lat., 118°23.86' W. long.;
- (23) 32°52.79' N. lat., 118°25.08' W. long.;
- (24) 32°54.03' N. lat., 118°26.83' W. long.;
- (25) 32°54.70' N. lat., 118°27.55' W. long.;
- (26) 32°55.49' N. lat., 118°29.04' W. long.;
- (27) 32°59.58' N. lat., 118°32.51' W. long.;
- (28) 32°59.89' N. lat., 118°32.52' W. long.;
- (29) 33°00.29' N. lat., 118°32.73' W. long.;
- (30) 33°00.85' N. lat., 118°33.50' W. long.;
- (31) 33°01.70' N. lat., 118°33.64' W. long.;
- (32) 33°02.90' N. lat., 118°35.35' W. long.;
- (33) 33°02.61' N. lat., 118°36.96' W. long.; and
- (34) 33°02.98' N lat., 118°37.64' W long.;

(j) The 30 fm (55 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°19.13' N. lat., 118°18.04' W. long.;
- (2) 33°18.32' N. lat., 118°18.20' W. long.;
- (3) 33°17.82' N. lat., 118°18.73' W. long.;
- (4) 33°17.54' N. lat., 118°19.52' W. long.;
- (5) 33°17.99' N. lat., 118°21.71' W. long.;
- (6) 33°18.48' N. lat., 118°22.82' W. long.;
- (7) 33°18.77' N. lat., 118°26.95' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (8) 33°19.69' N. lat., 118°28.87' W. long.;
- (9) 33°20.53' N. lat., 118°30.52' W. long.;
- (10) 33°20.46' N. lat., 118°31.47' W. long.;
- (11) 33°20.98' N. lat., 118°31.39' W. long.;
- (12) 33°20.81' N. lat., 118°30.49' W. long.;
- (13) 33°21.38' N. lat., 118°30.07' W. long.;
- (14) 33°23.12' N. lat., 118°29.31' W. long.;
- (15) 33°24.95' N. lat., 118°29.70' W. long.;
- (16) 33°25.39' N. lat., 118°30.50' W. long.;
- (17) 33°25.21' N. lat., 118°30.79' W. long.;
- (18) 33°25.65' N. lat., 118°31.60' W. long.;
- (19) 33°25.65' N. lat., 118°32.04' W. long.;
- (20) 33°25.94' N. lat., 118°32.96' W. long.;
- (21) 33°25.86' N. lat., 118°33.49' W. long.;
- (22) 33°26.06' N. lat., 118°34.12' W. long.;
- (23) 33°28.28' N. lat., 118°36.60' W. long.;
- (24) 33°28.83' N. lat., 118°36.42' W. long.;
- (25) 33°28.72' N. lat., 118°34.93' W. long.;
- (26) 33°28.71' N. lat., 118°33.61' W. long.;
- (27) 33°28.77' N. lat., 118°32.95' W. long.;
- (28) 33°28.73' N. lat., 118°32.07' W. long.;
- (29) 33°27.55' N. lat., 118°30.14' W. long.;
- (30) 33°27.58' N. lat., 118°29.51' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (31) 33°26.98' N. lat., 118°29.06' W. long.;
- (32) 33°26.96' N. lat., 118°28.58' W. long.;
- (33) 33°26.76' N. lat., 118°28.40' W. long.;
- (34) 33°26.52' N. lat., 118°27.66' W. long.;
- (35) 33°26.31' N. lat., 118°27.41' W. long.;
- (36) 33°25.09' N. lat., 118°23.13' W. long.;
- (37) 33°24.80' N. lat., 118°22.86' W. long.;
- (38) 33°24.60' N. lat., 118°22.02' W. long.;
- (39) 33°22.82' N. lat., 118°21.04' W. long.;
- (40) 33°20.21' N lat., 118°18.50' W long.;
- (41) 33°19.13' N. lat., 118°18.04' W. long.

(k) The 30 fm (55 m) depth contour around Santa Barbara Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°30.38' N lat., 119°03.15' W long.;
- (2) 33°29.64' N lat., 119°00.58' W long.;
- (3) 33°27.24' N lat., 119°01.73' W long.;
- (4) 33°27.76' N lat., 119°03.48' W long.;
- (5) 33°29.50' N lat., 119°04.20' W long.; and
- (6) 33°30.38' N lat., 119°03.15' W long.

(l) The 30 fm (55 m) depth contour around San Nicholas Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°18.39' N lat., 119°38.87' W long.;
- (2) 33°18.63' N lat., 119°27.52' W long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (3) 33°15.24' N lat., 119°20.10' W long.;
- (4) 33°13.27' N lat., 119°20.10' W long.;
- (5) 33°12.16' N lat., 119°26.82' W long.;
- (6) 33°13.20' N lat., 119°31.87' W. long.;
- (7) 33°15.70' N lat., 119°38.87' W long.;
- (8) 33°17.52' N lat., 119°40.15' W long.; and
- (9) 33°18.39' N lat., 119°38.87' W long.

(m) The 30 fm (55 m) depth contour around Tanner Bank off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°43.02' N lat., 119°08.52' W long.;
- (2) 32°41.81' N lat., 119°06.20' W long.;
- (3) 32°40.67' N lat., 119°06.82' W long.;
- (4) 32°41.62' N lat., 119°09.46' W long.; and
- (5) 32°43.02' N lat., 119°08.52' W long.

(n) The 30 fm (55 m) depth contour around Cortes Bank off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°29.73' N lat., 119°12.95' W long.;
- (2) 32°28.17' N lat., 119°07.04' W long.;
- (3) 32°26.27' N lat., 119°04.14' W long.;
- (4) 32°25.22' N lat., 119°04.77' W long.;
- (5) 32°28.60' N lat., 119°14.15' W long.; and
- (6) 32°29.73' N lat., 119°12.95' W long.

(o) The 40–fm (73–m) depth contour between 46°16' N. lat. and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (1) 46°16.00' N. lat., 124°16.10' W. long.;
- (2) 46°15.29' N. lat., 124°15.60' W. long.;
- (3) 46°11.90' N. lat., 124°13.59' W. long.;
- (4) 46°06.94' N. lat., 124°10.15' W. long.;
- (5) 46°05.33' N. lat., 124°08.30' W. long.;
- (6) 45°58.69' N. lat., 124°05.60' W. long.;
- (7) 45°57.71' N. lat., 124°05.81' W. long.;
- (8) 45°53.98' N. lat., 124°05.05' W. long.;
- (9) 45°49.75' N. lat., 124°05.14' W. long.;
- (10) 45°47.87' N. lat., 124°05.16' W. long.;
- (11) 45°47.07' N. lat., 124°04.21' W. long.;
- (12) 45°46.00' N. lat., 124°04.49' W. long.;
- (13) 45°44.34' N. lat., 124°05.09' W. long.;
- (14) 45°40.64' N. lat., 124°04.90' W. long.;
- (15) 45°33.00' N. lat., 124°04.46' W. long.;
- (16) 45°32.27' N. lat., 124°04.74' W. long.;
- (17) 45°29.26' N. lat., 124°04.22' W. long.;
- (18) 45°20.25' N. lat., 124°04.67' W. long.;
- (19) 45°19.99' N. lat., 124°04.62' W. long.;
- (20) 45°17.50' N. lat., 124°04.91' W. long.;
- (21) 45°11.29' N. lat., 124°05.20' W. long.;
- (22) 45°05.80' N. lat., 124°05.40' W. long.;
- (23) 45°05.08' N. lat., 124°05.93' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (24) 45°03.83' N. lat., 124°06.47' W. long.;
- (25) 45°01.70' N. lat., 124°06.53' W. long.;
- (26) 44°58.75' N. lat., 124°07.14' W. long.;
- (27) 44°51.28' N. lat., 124°10.21' W. long.;
- (28) 44°49.49' N. lat., 124°10.90' W. long.;
- (29) 44°44.96' N. lat., 124°14.39' W. long.;
- (30) 44°43.44' N. lat., 124°14.78' W. long.;
- (31) 44°42.26' N. lat., 124°13.81' W. long.;
- (32) 44°41.68' N. lat., 124°15.38' W. long.;
- (33) 44°34.87' N. lat., 124°15.80' W. long.;
- (34) 44°33.74' N. lat., 124°14.44' W. long.;
- (35) 44°27.66' N. lat., 124°16.99' W. long.;
- (36) 44°19.13' N. lat., 124°19.22' W. long.;
- (37) 44°15.35' N. lat., 124°17.38' W. long.;
- (38) 44°14.38' N. lat., 124°17.78' W. long.;
- (39) 44°12.80' N. lat., 124°17.18' W. long.;
- (40) 44°09.23' N. lat., 124°15.96' W. long.;
- (41) 44°08.38' N. lat., 124°16.79' W. long.;
- (42) 44°08.30' N. lat., 124°16.75' W. long.;
- (43) 44°01.18' N. lat., 124°15.42' W. long.;
- (44) 43°51.61' N. lat., 124°14.68' W. long.;
- (45) 43°42.66' N. lat., 124°15.46' W. long.;
- (46) 43°40.49' N. lat., 124°15.74' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (47) 43°38.77' N. lat., 124°15.64' W. long.;
- (48) 43°34.52' N. lat., 124°16.73' W. long.;
- (49) 43°28.82' N. lat., 124°19.52' W. long.;
- (50) 43°23.91' N. lat., 124°24.28' W. long.;
- (51) 43°20.83' N. lat., 124°26.63' W. long.;
- (52) 43°17.96' N. lat., 124°28.81' W. long.;
- (53) 43°16.75' N. lat., 124°28.42' W. long.;
- (54) 43°13.97' N. lat., 124°31.99' W. long.;
- (55) 43°13.72' N. lat., 124°33.25' W. long.;
- (56) 43°12.26' N. lat., 124°34.16' W. long.;
- (57) 43°10.96' N. lat., 124°32.33' W. long.;
- (58) 43°05.65' N. lat., 124°31.52' W. long.;
- (59) 42°59.66' N. lat., 124°32.58' W. long.;
- (60) 42°54.97' N. lat., 124°36.99' W. long.;
- (61) 42°53.81' N. lat., 124°38.57' W. long.;
- (62) 42°50.00' N. lat., 124°39.68' W. long.;
- (63) 42°49.13' N. lat., 124°39.70' W. long.;
- (64) 42°46.47' N. lat., 124°38.89' W. long.;
- (65) 42°45.74' N. lat., 124°38.86' W. long.;
- (66) 42°44.79' N. lat., 124°37.96' W. long.;
- (67) 42°45.01' N. lat., 124°36.39' W. long.;
- (68) 42°44.14' N. lat., 124°35.17' W. long.;
- (69) 42°42.14' N. lat., 124°32.82' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (70) 42°40.50' N. lat., 124°31.98' W. long.;
- (71) 42°38.81' N. lat., 124°31.09' W. long.;
- (72) 42°35.91' N. lat., 124°31.02' W. long.;
- (73) 42°31.34' N. lat., 124°34.84' W. long.;
- (74) 42°28.13' N. lat., 124°34.84' W. long.;
- (75) 42°26.74' N. lat., 124°35.59' W. long.;
- (76) 42°23.84' N. lat., 124°34.06' W. long.;
- (77) 42°21.68' N. lat., 124°30.64' W. long.;
- (78) 42°19.62' N. lat., 124°29.02' W. long.;
- (79) 42°15.01' N. lat., 124°27.72' W. long.;
- (80) 42°13.67' N. lat., 124°26.93' W. long.;
- (81) 42°11.38' N. lat., 124°25.63' W. long.;
- (82) 42°04.66' N. lat., 124°24.40' W. long.;
- (83) 42°00.00' N. lat., 124°23.55' W. long.;
- (84) 41°51.35' N. lat., 124°25.25' W. long.;
- (85) 41°44.10' N. lat., 124°19.05' W. long.;
- (86) 41°38.00' N. lat., 124°20.04' W. long.;
- (87) 41°18.43' N. lat., 124°13.48' W. long.;
- (88) 40°55.12' N. lat., 124°16.33' W. long.;
- (89) 40°41.00' N. lat., 124°27.66' W. long.;
- (90) 40°36.71' N. lat., 124°27.15' W. long.;
- (91) 40°32.81' N. lat., 124°29.42' W. long.;
- (92) 40°30.00' N. lat., 124°32.38' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (93) 40°29.13' N. lat., 124°33.23' W. long.;
- (94) 40°24.55' N. lat., 124°30.40' W. long.;
- (95) 40 °22.41' N lat., 124°24.19' W long.;
- (96) 40°19.67' N. lat., 124°25.52' W. long.;
- (97) 40°18.71' N lat., 124°22.63' W long.;
- (98) 40°15.21' N. lat., 124°24.53' W. long.;
- (99) 40°12.56' N. lat., 124°22.69' W. long.;
- (100) 40°10.00' N. lat., 124°17.84' W. long.;
- (101) 40°09.30' N. lat., 124°15.68' W. long.;
- (102) 40°08.31' N. lat., 124°15.17' W. long.;
- (103) 40°05.62' N. lat., 124°09.80' W. long.;
- (104) 40°06.57' N. lat., 124°07.99' W. long.;
- (105) 40°00.86' N. lat., 124°08.42' W. long.;
- (106) 39°54.79' N. lat., 124°05.25' W. long.;
- (107) 39°52.75' N. lat., 124°02.62' W. long.;
- (108) 39°52.51' N. lat., 123°58.15' W. long.;
- (109) 39°49.64' N. lat., 123°54.98' W. long.;
- (110) 39°41.46' N. lat., 123°50.65' W. long.;
- (111) 39°34.57' N. lat., 123°49.24' W. long.;
- (112) 39°22.63' N lat., 123°51.03' W long.;
- (113) 39°11.86' N lat., 123°48.83' W long.;
- (114) 39°04.58' N. lat., 123°45.43' W. long.;
- (115) 39°00.45' N. lat., 123°47.58' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (116) 38°57.50' N. lat., 123°47.27' W. long.;
- (117) 38°55.82' N. lat., 123°46.97' W. long.;
- (118) 38°52.26' N. lat., 123°44.35' W. long.;
- (119) 38°45.41' N. lat., 123°35.67' W. long.;
- (120) 38°40.60' N. lat., 123°28.22' W. long.;
- (121) 38°30.57' N. lat., 123°18.60' W. long.;
- (122) 38°21.64' N. lat., 123°08.91' W. long.;
- (123) 38°12.01' N. lat., 123°03.86' W. long.;
- (124) 38°06.16' N. lat., 123°07.01' W. long.;
- (125) 38°00.00' N. lat., 123°07.05' W. long.;
- (126) 37°51.73' N. lat., 122°57.97' W. long.;
- (127) 37°47.96' N. lat., 122°59.34' W. long.;
- (128) 37°47.37' N. lat., 123°08.84' W. long.;
- (129) 37°48.22' N. lat., 123°10.62' W. long.;
- (130) 37°47.53' N. lat., 123°11.54' W. long.;
- (131) 37°39.91' N. lat., 123°00.84' W. long.;
- (132) 37°38.75' N. lat., 122°52.16' W. long.;
- (133) 37°35.67' N. lat., 122°49.47' W. long.;
- (134) 37°25.00' N lat., 122°38.66' W long.;
- (135) 37°20.68' N lat., 122°36.79' W long.;
- (136) 37°20.24' N. lat., 122°33.82' W. long.;
- (137) 37°11.00' N. lat., 122°28.50' W. long.;
- (138) 37°07.00' N. lat., 122°26.26' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (139) 36°52.04' N. lat., 122°04.60' W. long.;
- (140) 36°52.00' N. lat., 121°57.41' W. long.;
- (141) 36°49.26' N. lat., 121°52.53' W. long.;
- (142) 36°49.22' N. lat., 121°49.85' W. long.;
- (143) 36°47.87' N. lat., 121°50.15' W. long.;
- (144) 36°48.07' N. lat., 121°48.21' W. long.;
- (145) 36°45.93' N. lat., 121°52.11' W. long.;
- (146) 36°40.55' N. lat., 121°52.59' W. long.;
- (147) 36°38.93' N. lat., 121°58.17' W. long.;
- (148) 36°36.54' N. lat., 122°00.18' W. long.;
- (149) 36°32.96' N. lat., 121°58.84' W. long.;
- (150) 36°33.14' N. lat., 121°57.56' W. long.;
- (151) 36°31.81' N. lat., 121°55.86' W. long.;
- (152) 36°31.53' N. lat., 121°58.09' W. long.;
- (153) 36°23.28' N. lat., 121°56.10' W. long.;
- (154) 36°18.40' N. lat., 121°57.93' W. long.;
- (155) 36°16.80' N. lat., 121°59.97' W. long.;
- (156) 36°15.00' N. lat., 121°55.95' W. long.;
- (157) 36°15.00' N. lat., 121°54.41' W. long.;
- (158) 36°11.06' N. lat., 121°43.10' W. long.;
- (159) 36°02.85' N. lat., 121°36.21' W. long.;
- (160) 36°01.22' N. lat., 121°36.36' W. long.;
- (161) 36°00.00' N. lat., 121°34.73' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (162) 35°58.67' N. lat., 121°30.68' W. long.;
- (163) 35°54.16' N. lat., 121°30.21' W. long.;
- (164) 35°46.98' N. lat., 121°24.02' W. long.;
- (165) 35°40.75' N. lat., 121°21.89' W. long.;
- (166) 35°34.36' N. lat., 121°11.07' W. long.;
- (167) 35°29.30' N. lat., 121°05.74' W. long.;
- (168) 35°22.15' N. lat., 120°56.15' W. long.;
- (169) 35°14.93' N. lat., 120°56.37' W. long.;
- (170) 35°04.06' N. lat., 120°46.35' W. long.;
- (171) 34°45.85' N. lat., 120°43.96' W. long.;
- (172) 34°37.80' N. lat., 120°44.44' W. long.;
- (173) 34°32.82' N. lat., 120°42.08' W. long.;
- (174) 34°27.00' N. lat., 120°31.27' W. long.;
- (175) 34°24.25' N. lat., 120°23.33' W. long.;
- (176) 34°26.48' N. lat., 120°13.93' W. long.;
- (177) 34°25.12' N. lat., 120°03.46' W. long.;
- (178) 34°17.58' N. lat., 119°31.62' W. long.;
- (179) 34°11.49' N. lat., 119°27.30' W. long.;
- (180) 34°05.59' N. lat., 119°15.52' W. long.;
- (181) 34°08.23' N. lat., 119°13.21' W. long.;
- (182) 34°04.81' N. lat., 119°13.44' W. long.;
- (183) 34°04.26' N. lat., 119°12.39' W. long.;
- (184) 34°03.89' N. lat., 119°07.06' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (185) 34°05.14' N. lat., 119°05.55' W. long.;
- (186) 34°01.27' N. lat., 118°59.62' W. long.;
- (187) 33°59.56' N. lat., 118°48.21' W. long.;
- (188) 33°59.30' N. lat., 118°35.43' W. long.;
- (189) 33°55.14' N. lat., 118°32.16' W. long.;
- (190) 33°52.95' N. lat., 118°34.49' W. long.;
- (191) 33°51.07' N. lat., 118°31.50' W. long.;
- (192) 33°52.45' N. lat., 118°28.54' W. long.;
- (193) 33°49.87' N. lat., 118° 24.15' W. long.;
- (194) 33°47.14' N. lat., 118°28.38' W. long.;
- (195) 33°44.14' N. lat., 118°25.18' W. long.;
- (196) 33°41.54' N. lat., 118°19.63' W. long.;
- (197) 33°37.86' N. lat., 118°15.06' W. long.;
- (198) 33°36.58' N. lat., 118°15.97' W. long.;
- (199) 33°34.78' N. lat., 118°12.60' W. long.;
- (200) 33°34.46' N. lat., 118°08.77' W. long.;
- (201) 33°35.92' N. lat., 118°07.04' W. long.;
- (202) 33°36.06' N. lat., 118°03.96' W. long.;
- (203) 33°34.98' N. lat., 118°02.74' W. long.;
- (204) 33°34.03' N. lat., 117°59.37' W. long.;
- (205) 33°35.46' N. lat., 117°55.61' W. long.;
- (206) 33°34.97' N. lat., 117°53.33' W. long.;
- (207) 33°31.20' N. lat., 117°47.40' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (208) 33°27.26' N. lat., 117°44.34' W. long.;
- (209) 33°24.84' N. lat., 117°40.75' W. long.;
- (210) 33°11.45' N. lat., 117°26.84' W. long.;
- (211) 33°07.59' N. lat., 117°21.46' W. long.;
- (212) 33°01.74' N. lat., 117°19.23' W. long.;
- (213) 32°56.44' N. lat., 117°18.08' W. long.;
- (214) 32°54.63' N. lat., 117°16.94' W. long.;
- (215) 32°51.90' N lat., 117°16.32' W long.;
- (216) 32°52.11' N lat., 117°19.33' W long.;
- (217) 32°46.91' N. lat., 117°20.43' W. long.;
- (218) 32°43.49' N. lat., 117°18.12' W. long.; and
- (219) 32°33.33' N lat., 117°16.45' W long.

(p) The 40 fm (73 m) depth contour around the northern Channel Islands off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 34°07.88' N. lat., 120°27.79' W. long.;
- (2) 34°07.45' N. lat., 120°28.26' W. long.;
- (3) 34°07.03' N. lat., 120°27.29' W. long.;
- (4) 34°06.19' N. lat., 120°28.81' W. long.;
- (5) 34°06.44' N. lat., 120°31.17' W. long.;
- (6) 34°05.81' N. lat., 120°31.97' W. long.;
- (7) 34°03.51' N. lat., 120°29.61' W. long.;
- (8) 34°01.56' N. lat., 120°28.83' W. long.;
- (9) 34°00.81' N. lat., 120°27.94' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (10) 33°59.26' N. lat., 120°17.95' W. long.;
- (11) 33°54.71' N. lat., 120°12.72' W. long.;
- (12) 33°51.61' N. lat., 120°02.49' W. long.;
- (13) 33°51.68' N. lat., 119°59.41' W. long.;
- (14) 33°52.71' N. lat., 119°57.25' W. long.;
- (15) 33°55.83' N. lat., 119°55.92' W. long.;
- (16) 33°59.64' N. lat., 119°56.03' W. long.;
- (17) 33°56.30' N. lat., 119°48.63' W. long.;
- (18) 33°56.77' N. lat., 119°41.87' W. long.;
- (19) 33°58.54' N. lat., 119°34.98' W. long.;
- (20) 33°59.52' N. lat., 119°24.69' W. long.;
- (21) 34°00.24' N. lat., 119°21.00' W. long.;
- (22) 34°02.00' N. lat., 119°19.57' W. long.;
- (23) 34°01.29' N. lat., 119°23.92' W. long.;
- (24) 34°01.95' N. lat., 119°28.94' W. long.;
- (25) 34°03.90' N. lat., 119°33.43' W. long.;
- (26) 34°03.31' N. lat., 119°36.51' W. long.;
- (27) 34°02.13' N. lat., 119°37.99' W. long.;
- (28) 34°01.96' N. lat., 119°40.35' W. long.;
- (29) 34°03.52' N. lat., 119°43.22' W. long.;
- (30) 34°04.03' N. lat., 119°45.66' W. long.;
- (31) 34°04.03' N. lat., 119°48.13' W. long.;
- (32) 34°05.15' N. lat., 119°52.97' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (33) 34°05.47' N. lat., 119°57.55' W. long.;
- (34) 34°04.43' N. lat., 120°02.29' W. long.;
- (35) 34°05.64' N. lat., 120°04.05' W. long.;
- (36) 34°04.16' N. lat., 120°07.60' W. long.;
- (37) 34°05.04' N. lat., 120°12.78' W. long.;
- (38) 34°04.45' N. lat., 120°17.78' W. long.;
- (39) 34°07.37' N. lat., 120°24.14' W. long.; and
- (40) 34°07.88' N. lat., 120°27.79' W. long.

(q) The 40 fm (73 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°02.94' N. lat., 118°38.42' W. long.;
- (2) 33°01.79' N. lat., 118°37.67' W. long.;
- (3) 33°00.47' N. lat., 118°37.65' W. long.;
- (4) 32°59.64' N. lat., 118°37.04' W. long.;
- (5) 32°59.81' N. lat., 118°36.37' W. long.;
- (6) 32°57.84' N. lat., 118°35.67' W. long.;
- (7) 32°55.89' N. lat., 118°33.88' W. long.;
- (8) 32° 54.78' N lat., 118°33.44' W long.;
- (9) 32°53.75' N. lat., 118°32.47' W. long.;
- (10) 32°50.36' N. lat., 118°30.50' W. long.;
- (11) 32°49.78' N. lat., 118°29.65' W. long.;
- (12) 32°49.70' N. lat., 118°28.96' W. long.;
- (13) 32°46.79' N. lat., 118°25.60' W. long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (14) 32°45.53' N lat., 118°24.82' W long.;
- (15) 32°45.94' N. lat., 118°24.12' W. long.;
- (16) 32°46.85' N. lat., 118°24.79' W. long.;
- (17) 32°48.49' N. lat., 118°23.25' W. long.;
- (18) 32°48.80' N. lat., 118°20.52' W. long.;
- (19) 32°49.70' N lat., 118°21.04' W long.;
- (20) 32°55.04' N. lat., 118°27.97' W. long.;
- (21) 32°55.48' N. lat., 118°29.01' W. long.;
- (22) 33°00.35' N. lat., 118°32.61' W. long.;
- (23) 33°01.79' N. lat., 118°33.66' W. long.;
- (24) 33°02.98' N lat., 118°35.40' W long.;
- (25) 33°03.36' N lat., 118°37.57' W long.; and
- (26) 33°02.94' N. lat., 118°38.42' W. long.

(r) The 40 fm (73 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.90' N. lat., 118°36.43' W. long.;
- (2) 33°28.49' N. lat., 118°36.70' W. long.;
- (3) 33°28.02' N. lat., 118°36.70' W. long.;
- (4) 33°25.81' N. lat., 118°33.95' W. long.;
- (5) 33°25.78' N. lat., 118°32.94' W. long.;
- (6) 33°24.77' N. lat., 118°29.99' W. long.;
- (7) 33°23.19' N. lat., 118°29.61' W. long.;
- (8) 33°20.88' N lat., 118°30.54' W long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

- (9) 33°21.06' N. lat., 118°31.52' W. long.;
- (10) 33°20.43' N. lat., 118°31.62' W. long.;
- (11) 33°20.45' N. lat., 118°30.46' W. long.;
- (12) 33°18.71' N. lat., 118°27.64' W. long.;
- (13) 33°17.36' N. lat., 118°18.75' W. long.;
- (14) 33°19.17' N. lat., 118°17.56' W. long.;
- (15) 33°22.24' N lat., 118°19.99' W long.;
- (16) 33°23.31' N. lat., 118°20.45' W. long.;
- (17) 33°24.71' N. lat., 118°22.13' W. long.;
- (18) 33°25.27' N. lat., 118°23.30' W. long.;
- (19) 33°26.73' N. lat., 118°28.00' W. long.;
- (20) 33°27.91' N. lat., 118°29.93' W. long.;
- (21) 33°28.79' N. lat., 118°32.16' W. long.; and
- (22) 33°28.90' N. lat., 118°36.43' W. long.

(s) The 40 fm (73 m) depth contour around Santa Barbara Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°30.87' N lat., 119°02.43' W long.;
- (2) 33°29.87' N lat., 119°00.34' W long.;
- (3) 33°27.08' N lat., 119°01.65' W long.;
- (4) 33°27.64' N lat., 119°03.45' W long.;
- (5) 33°29.12' N lat., 119°04.55' W long.;
- (6) 33°29.66' N lat., 119°05.49' W long.; and
- (7) 33°30.87' N lat., 119°02.43' W long.

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

(t) The 40 fm (73 m) depth contour around Tanner Bank off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°43.40' N lat., 119°08.56' W long.;
- (2) 32°41.36' N lat., 119°05.02' W long.;
- (3) 32°40.07' N lat., 119°05.59' W long.;
- (4) 32°41.51' N lat., 119°09.76' W long.; and
- (5) 32°43.40' N lat., 119°08.56' W long.

(u) The 40 fm (73 m) depth contour around San Nicholas Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°19.30' N lat., 119°41.05' W long.;
- (2) 33°19.42' N lat., 119°27.88' W long.;
- (3) 33°14.31' N lat., 119°17.48' W long.;
- (4) 33°12.90' N lat., 119°17.64' W long.;
- (5) 33°11.89' N lat., 119°27.26' W long.;
- (6) 33°12.19' N lat., 119°29.96' W long.;
- (7) 33°15.42' N lat., 119°39.14' W long.;
- (8) 33°17.58' N lat., 119°41.38' W long.; and
- (9) 33°19.30' N lat., 119°41.05' W long.

(v) The 40 fm (73 m) depth contour around Cortes Bank off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°30.00' N lat., 119°12.98' W long.;
- (2) 32°28.33' N lat., 119°06.81' W long.;
- (3) 32°25.69' N lat., 119°03.21' W long.;
- (4) 32°24.66' N lat., 119°03.83' W long.;

§ 660.71 Latitude/longitude coordinates defining the 10–fm (18–m) through 40–fm (73–m) depth contours

(5) 32°28.48' N lat., 119°14.66' W long.; and

(6) 32°30.00' N lat., 119°12.98' W long.

[[69 FR 77042](#), Dec. 23, 2004, as amended at [70 FR 16149](#), Mar. 30, 2005; [71 FR 8498](#), Feb. 17, 2006; [71 FR 78665](#), Dec. 29, 2006; [72 FR 13045](#), Mar. 20, 2007; [74 FR 9893](#), Mar. 6, 2009. Redesignated at [75 FR 60995](#), Oct. 1, 2010; [76 FR 27530](#), May 11, 2011; [77 FR 55155](#), Sept. 7, 2012; [82 FR 9640](#), Feb. 7, 2017; [83 FR 63991](#), Dec. 12, 2018; [84 FR 63974](#), Nov. 19, 2019; [85 FR 79893](#), Dec. 11, 2020; [87 FR 77015](#), Dec. 16, 2022; [88 FR 12867](#), Mar. 1, 2023]

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours.

Boundaries for some GCAs are defined by straight lines connecting a series of latitude/longitude coordinates. This section provides coordinates for the 50 fm (91 m) through 75 fm (137 m) depth contours.

(a) The 50–fm (91–m) depth contour between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°22.15' N. lat., 124°43.15' W. long.;
- (2) 48°22.15' N. lat., 124°49.10' W. long.;
- (3) 48°20.03' N. lat., 124°51.18' W. long.;
- (4) 48°16.61' N. lat., 124°53.72' W. long.;
- (5) 48°14.68' N. lat., 124°54.50' W. long.;
- (6) 48°12.02' N. lat., 124°55.29' W. long.;
- (7) 48°10.00' N. lat., 124°55.68' W. long.;
- (8) 48°03.14' N. lat., 124°57.02' W. long.;
- (9) 47°56.05' N. lat., 124°55.60' W. long.;
- (10) 47°52.58' N. lat., 124°54.00' W. long.;
- (11) 47°50.18' N. lat., 124°52.36' W. long.;
- (12) 47°45.34' N. lat., 124°51.07' W. long.;
- (13) 47°40.96' N. lat., 124°48.84' W. long.;
- (14) 47°34.59' N. lat., 124°46.24' W. long.;
- (15) 47°27.86' N. lat., 124°42.12' W. long.;
- (16) 47°22.34' N. lat., 124°39.43' W. long.;
- (17) 47°17.66' N. lat., 124°38.75' W. long.;
- (18) 47°06.25' N. lat., 124°39.74' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (19) 47°00.43' N. lat., 124°38.01' W. long.;
- (20) 46°52.00' N. lat., 124°32.44' W. long.;
- (21) 46°38.17' N. lat., 124°26.66' W. long.;
- (22) 46°35.41' N. lat., 124°25.51' W. long.;
- (23) 46°25.43' N. lat., 124°23.46' W. long.;
- (24) 46°16.00' N. lat., 124°17.32' W. long.;
- (25) 45°50.88' N. lat., 124°09.68' W. long.;
- (26) 45°46.00' N. lat., 124°09.39' W. long.;
- (27) 45°20.25' N. lat., 124°07.34' W. long.;
- (28) 45°12.99' N. lat., 124°06.71' W. long.;
- (29) 45°03.83' N. lat., 124°09.17' W. long.;
- (30) 44°52.48' N. lat., 124°11.22' W. long.;
- (31) 44°42.41' N. lat., 124°19.70' W. long.;
- (32) 44°38.80' N. lat., 124°26.58' W. long.;
- (33) 44°23.39' N. lat., 124°31.70' W. long.;
- (34) 44°20.30' N. lat., 124°38.72' W. long.;
- (35) 44°13.52' N. lat., 124°40.45' W. long.;
- (36) 44°18.80' N. lat., 124°35.48' W. long.;
- (37) 44°19.62' N. lat., 124°27.18' W. long.;
- (38) 44°08.30' N. lat., 124°22.17' W. long.;
- (39) 43°56.65' N. lat., 124°16.86' W. long.;
- (40) 43°34.95' N. lat., 124°17.47' W. long.;
- (41) 43°20.83' N. lat., 124°29.11' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (42) 43°12.60' N. lat., 124°35.80' W. long.;
- (43) 43°08.96' N. lat., 124°33.77' W. long.;
- (44) 42°59.66' N. lat., 124°34.79' W. long.;
- (45) 42°54.29' N. lat., 124°39.46' W. long.;
- (46) 42°50.00' N. lat., 124°39.84' W. long.;
- (47) 42°46.50' N. lat., 124°39.99' W. long.;
- (48) 42°41.00' N. lat., 124°34.92' W. long.;
- (49) 42°40.50' N. lat., 124°34.98' W. long.;
- (50) 42°36.29' N. lat., 124°34.70' W. long.;
- (51) 42°28.36' N. lat., 124°37.90' W. long.;
- (52) 42°25.53' N. lat., 124°37.68' W. long.;
- (53) 42°18.64' N. lat., 124°29.47' W. long.;
- (54) 42°13.67' N. lat., 124°27.67' W. long.;
- (55) 42°03.04' N. lat., 124°25.81' W. long.;
- (56) 42°00.00' N. lat., 124°26.21' W. long.;
- (57) 41°57.60' N. lat., 124°27.35' W. long.;
- (58) 41°52.53' N. lat., 124°26.51' W. long.;
- (59) 41°50.17' N. lat., 124°25.63' W. long.;
- (60) 41°46.01' N. lat., 124°22.16' W. long.;
- (61) 41°26.50' N. lat., 124°21.78' W. long.;
- (62) 41°15.66' N. lat., 124°16.42' W. long.;
- (63) 41°05.45' N. lat., 124°16.89' W. long.;
- (64) 40°54.55' N. lat., 124°19.53' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (65) 40°42.22' N. lat., 124°28.29' W. long.;
- (66) 40°39.68' N. lat., 124°28.37' W. long.;
- (67) 40°36.76' N. lat., 124°27.39' W. long.;
- (68) 40°34.44' N. lat., 124°28.89' W. long.;
- (69) 40°32.57' N. lat., 124°32.43' W. long.;
- (70) 40°30.95' N. lat., 124°33.87' W. long.;
- (71) 40°30.00' N. lat., 124°34.18' W. long.;
- (72) 40°28.90' N. lat., 124°34.59' W. long.;
- (73) 40°24.36' N. lat., 124°31.42' W. long.;
- (74) 40°23.71' N. lat., 124°28.32' W. long.;
- (75) 40°22.53' N. lat., 124°24.67' W. long.;
- (76) 40°21.52' N. lat., 124°24.86' W. long.;
- (77) 40°21.25' N. lat., 124°25.59' W. long.;
- (78) 40°20.63' N. lat., 124°26.47' W. long.;
- (79) 40°19.18' N. lat., 124°25.98' W. long.;
- (80) 40°18.42' N. lat., 124°24.77' W. long.;
- (81) 40°18.64' N. lat., 124°22.81' W. long.;
- (82) 40°15.31' N. lat., 124°25.28' W. long.;
- (83) 40°15.37' N. lat., 124°26.82' W. long.;
- (84) 40°11.91' N. lat., 124°22.68' W. long.;
- (85) 40°10.00' N. lat., 124°19.97' W. long.;
- (86) 40°09.20' N. lat., 124°15.81' W. long.;
- (87) 40°07.51' N. lat., 124°15.29' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (88) 40°05.22' N. lat., 124°10.06' W. long.;
- (89) 40°06.51' N. lat., 124°08.01' W. long.;
- (90) 40°00.72' N. lat., 124°08.45' W. long.;
- (91) 39°56.60' N. lat., 124°07.12' W. long.;
- (92) 39°52.58' N. lat., 124°03.57' W. long.;
- (93) 39°50.65' N. lat., 123°57.98' W. long.;
- (94) 39°40.16' N. lat., 123°52.41' W. long.;
- (95) 39°30.12' N. lat., 123°52.92' W. long.;
- (96) 39°24.53' N. lat., 123°55.16' W. long.;
- (97) 39°11.58' N. lat., 123°50.93' W. long.;
- (98) 38°57.50' N. lat., 123°51.10' W. long.;
- (99) 38°55.13' N. lat., 123°51.14' W. long.;
- (100) 38°28.58' N. lat., 123°22.84' W. long.;
- (101) 38°14.60' N. lat., 123°09.92' W. long.;
- (102) 38°01.84' N. lat., 123°09.75' W. long.;
- (103) 38°00.00' N. lat., 123°09.25' W. long.;
- (104) 37°55.24' N. lat., 123°08.30' W. long.;
- (105) 37°52.06' N. lat., 123°09.19' W. long.;
- (106) 37°49.84' N. lat., 123°16.05' W. long.;
- (107) 37°35.67' N. lat., 122°55.43' W. long.;
- (108) 37°11.00' N. lat., 122°31.67' W. long.;
- (109) 37°07.00' N. lat., 122°28.00' W. long.;
- (110) 37°03.06' N. lat., 122°24.22' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (111) 36°50.20' N. lat., 122°03.58' W. long.;
- (112) 36°51.46' N. lat., 121°57.54' W. long.;
- (113) 36°48.53' N. lat., 121°57.84' W. long.;
- (114) 36°48.91' N. lat., 121°49.92' W. long.;
- (115) 36°36.82' N. lat., 122°00.66' W. long.;
- (116) 36°32.89' N. lat., 121°58.85' W. long.;
- (117) 36°33.10' N. lat., 121°57.56' W. long.;
- (118) 36°31.82' N. lat., 121°55.96' W. long.;
- (119) 36°31.57' N. lat., 121°58.15' W. long.;
- (120) 36°23.15' N. lat., 121°57.12' W. long.;
- (121) 36°18.40' N. lat., 121°58.97' W. long.;
- (122) 36°18.40' N. lat., 122°00.35' W. long.;
- (123) 36°16.02' N. lat., 122°00.35' W. long.;
- (124) 36°15.00' N. lat., 121°58.53' W. long.;
- (125) 36°15.00' N. lat., 121°56.53' W. long.;
- (126) 36°14.79' N. lat., 121°54.41' W. long.;
- (127) 36°10.41' N. lat., 121°42.88' W. long.;
- (128) 36°02.56' N. lat., 121°36.37' W. long.;
- (129) 36°01.11' N. lat., 121°36.39' W. long.;
- (130) 36°00.00' N lat., 121°34.95' W long.;
- (131) 35°58.26' N. lat., 121°32.88' W. long.;
- (132) 35°40.44' N lat., 121° 22.43' W long.;
- (133) 35°27.11' N lat., 121°03.55' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (134) 35°14.91' N lat., 120°56.67' W long.;
- (135) 35°01.43' N. lat., 120°48.01' W. long.;
- (136) 34°37.98' N. lat., 120°46.48' W. long.;
- (137) 34°32.98' N. lat., 120°43.34' W. long.;
- (138) 34°27.00' N. lat., 120°33.31' W. long.;
- (139) 34°23.47' N. lat., 120°24.76' W. long.;
- (140) 34°25.78' N. lat., 120°16.82' W. long.;
- (141) 34°24.65' N. lat., 120°04.83' W. long.;
- (142) 34°23.18' N. lat., 119°56.18' W. long.;
- (143) 34°19.20' N. lat., 119°41.64' W. long.;
- (144) 34°16.82' N. lat., 119°35.32' W. long.;
- (145) 34°13.43' N. lat., 119°32.29' W. long.;
- (146) 34°05.39' N. lat., 119°15.13' W. long.;
- (147) 34°07.83' N lat., 119°13.48' W long.;
- (148) 34°07.71' N lat., 119°13.29' W long.;
- (149) 34°04.56' N. lat., 119°13.73' W. long.;
- (150) 34°03.90' N. lat., 119°12.66' W. long.;
- (151) 34°03.66' N. lat., 119°06.82' W. long.;
- (152) 34°04.58' N. lat., 119°04.91' W. long.;
- (153) 34°01.28' N. lat., 119°00.21' W. long.;
- (154) 34°00.19' N. lat., 119°03.14' W. long.;
- (155) 33°59.66' N. lat., 119°03.10' W. long.;
- (156) 33°59.54' N. lat., 119°00.88' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (157) 34°00.82' N. lat., 118°59.03' W. long.;
- (158) 33°59.11' N. lat., 118°47.52' W. long.;
- (159) 33°59.07' N. lat., 118°36.33' W. long.;
- (160) 33°55.06' N. lat., 118°32.86' W. long.;
- (161) 33°53.56' N. lat., 118°37.75' W. long.;
- (162) 33°51.33' N lat., 118°36.00' W long.;
- (163) 33°50.48' N. lat., 118°32.16' W. long.;
- (164) 33°51.86' N. lat., 118°28.71' W. long.;
- (165) 33°50.09' N. lat., 118°27.88' W. long.;
- (166) 33°49.95' N. lat., 118°26.38' W. long.;
- (167) 33°50.73' N. lat., 118°26.17' W. long.;
- (168) 33°49.86' N. lat., 118°24.25' W. long.;
- (169) 33°48.25' N lat., 118°26.97' W long.;
- (170) 33°47.54' N. lat., 118°29.66' W. long.;
- (171) 33°44.11' N lat., 118°25.23' W long.;
- (172) 33°41.78' N. lat., 118°20.28' W. long.;
- (173) 33°38.16' N lat., 118°15.65' W long.;
- (174) 33°37.47' N lat., 118° 16.62' W long.;
- (175) 33°35.98' N. lat., 118°16.54' W. long.;
- (176) 33°34.15' N. lat., 118°11.22' W. long.;
- (177) 33°34.29' N. lat., 118°08.35' W. long.;
- (178) 33°35.53' N. lat., 118°06.66' W. long.;
- (179) 33°35.93' N. lat., 118°04.78' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (180) 33°34.97' N. lat., 118°02.91' W. long.;
- (181) 33°33.84' N. lat., 117°59.77' W. long.;
- (182) 33°35.33' N. lat., 117°55.89' W. long.;
- (183) 33°35.05' N. lat., 117°53.72' W. long.;
- (184) 33°31.32' N. lat., 117°48.01' W. long.;
- (185) 33°27.99' N. lat., 117°45.19' W. long.;
- (186) 33°26.93' N. lat., 117°44.24' W. long.;
- (187) 33°25.46' N. lat., 117°42.06' W. long.;
- (188) 33°18.45' N. lat., 117°35.73' W. long.;
- (189) 33°10.29' N. lat., 117°25.68' W. long.;
- (190) 33°07.47' N. lat., 117°21.62' W. long.;
- (191) 33°04.47' N. lat., 117°21.24' W. long.;
- (192) 32°59.89' N. lat., 117°19.11' W. long.;
- (193) 32°57.41' N. lat., 117°18.64' W. long.;
- (194) 32°55.35' N. lat., 117°18.65' W. long.;
- (195) 32°54.43' N. lat., 117°16.93' W. long.;
- (196) 32°52.34' N. lat., 117°16.73' W. long.;
- (197) 32°52.64' N. lat., 117°17.76' W. long.;
- (198) 32°52.24' N. lat., 117°19.36' W. long.;
- (199) 32°47.06' N. lat., 117°21.92' W. long.;
- (200) 32°41.93' N. lat., 117°19.68' W. long.; and
- (201) 32°33.59' N. lat., 117°17.89' W. long.

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(b) The 50-fm (91-m) depth contour around the Swiftsure Bank and along the U.S. border with Canada is defined by straight lines connecting all of the following points in the order stated:

(1) 48°30.15' N. lat., 124°56.12' W. long.;

(2) 48°28.29' N. lat., 124°56.30' W. long.;

(3) 48°29.23' N. lat., 124°53.63' W. long.;

(4) 48°30.31' N. lat., 124°51.73' W. long.;

and connecting back to 48°30.15' N. lat., 124°56.12' W. long.

(c) The 50 fm (91 m) depth contour around the northern Channel Islands off the state of California is defined by straight lines connecting all of the following points in the order stated:

(1) 34°08.40' N. lat., 120°33.78' W. long.;

(2) 34°07.80' N. lat., 120°30.99' W. long.;

(3) 34°08.42' N. lat., 120°27.92' W. long.;

(4) 34°09.31' N. lat., 120°27.81' W. long.;

(5) 34°05.85' N. lat., 120°17.13' W. long.;

(6) 34°05.73' N. lat., 120°05.93' W. long.;

(7) 34°06.14' N. lat., 120°04.86' W. long.;

(8) 34°05.70' N. lat., 120°03.17' W. long.;

(9) 34°05.67' N. lat., 119°58.98' W. long.;

(10) 34°06.34' N. lat., 119°56.78' W. long.;

(11) 34°05.57' N. lat., 119°51.35' W. long.;

(12) 34°07.08' N. lat., 119°52.43' W. long.;

(13) 34°04.49' N. lat., 119°35.55' W. long.;

(14) 34°04.73' N. lat., 119°32.77' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (15) 34°02.02' N. lat., 119°19.18' W. long.;
- (16) 34°01.03' N. lat., 119°19.50' W. long.;
- (17) 33°59.45' N. lat., 119°22.38' W. long.;
- (18) 33°58.76' N lat., 119°32.27' W long.;
- (19) 33°56.43' N. lat., 119°41.13' W. long.;
- (20) 33°56.04' N. lat., 119°48.20' W. long.;
- (21) 33°57.32' N. lat., 119°51.96' W. long.;
- (22) 33°59.32' N. lat., 119°55.59' W. long.;
- (23) 33°57.52' N. lat., 119°55.19' W. long.;
- (24) 33°56.26' N. lat., 119°54.29' W. long.;
- (25) 33°54.30' N. lat., 119°54.83' W. long.;
- (26) 33°50.97' N. lat., 119°57.03' W. long.;
- (27) 33°50.25' N. lat., 120°00.00' W. long.;
- (28) 33°50.03' N. lat., 120°03.00' W. long.;
- (29) 33°51.06' N. lat., 120°03.73' W. long.;
- (30) 33°54.49' N. lat., 120°12.85' W. long.;
- (31) 33°58.90' N. lat., 120°20.15' W. long.;
- (32) 34°00.71' N. lat., 120°28.21' W. long.;
- (33) 34°02.47' N lat., 120°30.00' W long.;
- (34) 34°03.60' N. lat., 120°30.60' W. long.;
- (35) 34°06.96' N. lat., 120°34.22' W. long.;
- (36) 34°08.01' N. lat., 120°35.24' W. long.; and
- (37) 34°08.40' N. lat., 120°33.78' W. long.

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(d) The 50 fm (91 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°03.73' N. lat., 118°36.98' W. long.;
- (2) 33°02.53' N lat., 118°34.25' W long.;
- (3) 32°55.51' N lat., 118°28.92' W long.;
- (4) 32°54.99' N lat., 118°27.72' W long.;
- (5) 32°49.73' N. lat., 118°20.99' W. long.;
- (6) 32°48.55' N. lat., 118°20.24' W. long.;
- (7) 32°47.92' N. lat., 118°22.45' W. long.;
- (8) 32°45.25' N. lat., 118°24.59' W. long.;
- (9) 32°50.23' N. lat., 118°30.80' W. long.;
- (10) 32°55.28' N. lat., 118°33.83' W. long.;
- (11) 33°00.45' N. lat., 118°37.88' W. long.;
- (12) 33°03.27' N. lat., 118°38.56' W. long.; and
- (13) 33°03.73' N. lat., 118°36.98' W. long.

(e) The 50 fm (91 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.01' N. lat., 118°37.42' W. long.;
- (2) 33°29.02' N. lat., 118°36.33' W. long.;
- (3) 33°28.97' N. lat., 118°33.16' W. long.;
- (4) 33°28.71' N. lat., 118°31.22' W. long.;
- (5) 33°26.66' N. lat., 118°27.48' W. long.;
- (6) 33°25.35' N. lat., 118°22.83' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (7) 33°22.61' N. lat., 118°19.18' W. long.;
- (8) 33°20.06' N. lat., 118°17.35' W. long.;
- (9) 33°17.58' N. lat., 118°17.42' W. long.;
- (10) 33°17.05' N. lat., 118°18.72' W. long.;
- (11) 33°17.87' N. lat., 118°24.47' W. long.;
- (12) 33°18.63' N. lat., 118°28.16' W. long.;
- (13) 33°20.17' N. lat., 118°31.69' W. long.;
- (14) 33°20.85' N. lat., 118°31.82' W. long.;
- (15) 33°23.19' N. lat., 118°29.78' W. long.;
- (16) 33°24.85' N. lat., 118°31.22' W. long.;
- (17) 33°25.65' N. lat., 118°34.11' W. long.; and
- (18) 33°28.01' N. lat., 118°37.42' W. long.

(f) The 50 fm (91 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°31.77' N lat., 119°3.41' W long.;
- (2) 33°29.66' N lat., 119°5.86' W long.;
- (3) 33°26.94' N lat., 119°2.95' W long.;
- (4) 33°27.08' N lat., 119°0.51' W long.;
- (5) 33°28.82' N lat., 118°59.42' W long.;
- (6) 33°30.67' N lat., 119°0.88' W long.; and
- (7) 33°31.77' N lat., 119°3.41' W long.

(g) The 50 fm (91 m) depth contour around Tanner Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°45.53' N lat., 119°13.28' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (2) 32°43.98' N lat., 119°15.05' W long.;
- (3) 32°38.45' N lat., 119°4.92' W long.;
- (4) 32°41.44' N lat., 119°3.71' W long.;
- (5) 32°45.02' N lat., 119°11.08' W long.; and
- (6) 32°45.53' N lat., 119°13.28' W long.

(h) The 50 fm (91 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°22.14' N lat., 119°42.12' W long.;
- (2) 33°17.68' N lat., 119°43.24' W long.;
- (3) 33°15.29' N lat., 119°39.32' W long.;
- (4) 33°11.98' N lat., 119°29.64' W long.;
- (5) 33°11.6' N lat., 119°27.26' W long.;
- (6) 33°12.99' N lat., 119°16.36' W long.;
- (7) 33°14.43' N lat., 119°17.42' W long.;
- (8) 33°17.2' N lat., 119°23.16' W long.;
- (9) 33°20.73' N lat., 119° 27.33' W long.; and
- (10) 33° 22.14' N lat., 119°42.12' W long.

(i) The 50 fm (91 m) depth contour around Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°35.89' N lat., 119°18.39' W long.;
- (2) 32°31.93' N lat., 119°20.54' W long.;
- (3) 32°29.47' N lat., 119°14.81' W long.;
- (4) 32°28.14' N lat., 119°14.94' W long.;
- (5) 32°24.37' N lat., 119°3.69' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(6) 32°24.5' N lat., 119°0.52' W long.;

(7) 32°26.04' N lat., 119°0.46' W long.; and

(8) 32°35.89' N lat., 119°18.39' W long.

(j) The 60–fm (110–m) depth contour used between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

(1) 48°26.70' N. lat., 125°09.43' W. long.;

(2) 48°23.76' N. lat., 125°06.77' W. long.;

(3) 48°23.01' N. lat., 125°03.48' W. long.;

(4) 48°22.42' N. lat., 124°57.84' W. long.;

(5) 48°22.62' N. lat., 124°48.97' W. long.;

(6) 48°18.61' N. lat., 124°52.52' W. long.;

(7) 48°16.62' N. lat., 124°54.03' W. long.;

(8) 48°15.39' N. lat., 124°54.79' W. long.;

(9) 48°13.81' N. lat., 124°55.45' W. long.;

(10) 48°10.51' N. lat., 124°56.56' W. long.;

(11) 48°10.00' N. lat., 124°56.72' W. long.;

(12) 48°06.90' N. lat., 124°57.72' W. long.;

(13) 48°02.23' N. lat., 125°00.20' W. long.;

(14) 48°00.87' N. lat., 125°00.37' W. long.;

(15) 47°56.30' N. lat., 124°59.51' W. long.;

(16) 47°46.84' N. lat., 124°57.34' W. long.;

(17) 47°36.49' N. lat., 124°50.93' W. long.;

(18) 47°32.01' N. lat., 124°48.45' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (19) 47°27.19' N. lat., 124°46.47' W. long.;
- (20) 47°21.76' N. lat., 124°43.29' W. long.;
- (21) 47°17.82' N. lat., 124°42.12' W. long.;
- (22) 47°08.87' N. lat., 124°43.10' W. long.;
- (23) 47°03.16' N. lat., 124°42.61' W. long.;
- (24) 46°49.70' N. lat., 124°36.80' W. long.;
- (25) 46°42.91' N. lat., 124°33.20' W. long.;
- (26) 46°39.67' N. lat., 124°30.59' W. long.;
- (27) 46°38.17' N. lat., 124°29.70' W. long.;
- (28) 46°32.47' N. lat., 124°26.34' W. long.;
- (29) 46°23.69' N. lat., 124°25.41' W. long.;
- (30) 46°20.84' N. lat., 124°24.24' W. long.;
- (31) 46°16.00' N. lat., 124°19.10' W. long.;
- (32) 46°15.97' N. lat., 124°18.80' W. long.;
- (33) 46°11.23' N. lat., 124°19.96' W. long.;
- (34) 46°02.51' N. lat., 124°19.84' W. long.;
- (35) 45°59.05' N. lat., 124°16.52' W. long.;
- (36) 45°50.99' N. lat., 124°12.83' W. long.;
- (37) 45°46.00' N. lat., 124°11.58' W. long.;
- (38) 45°45.85' N. lat., 124°11.54' W. long.;
- (39) 45°38.53' N. lat., 124°11.92' W. long.;
- (40) 45°30.90' N. lat., 124°10.94' W. long.;
- (41) 45°21.20' N. lat., 124°09.12' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (42) 45°12.43' N. lat., 124°08.74' W. long.;
- (43) 45°03.83' N. lat., 124°10.94' W. long.;
- (44) 44°59.89' N. lat., 124°11.95' W. long.;
- (45) 44°51.96' N. lat., 124°15.15' W. long.;
- (46) 44°44.63' N. lat., 124°20.07' W. long.;
- (47) 44°39.23' N. lat., 124°28.09' W. long.;
- (48) 44°30.61' N. lat., 124°31.66' W. long.;
- (49) 44°26.20' N. lat., 124°35.87' W. long.;
- (50) 44°23.65' N. lat., 124°39.07' W. long.;
- (51) 44°20.30' N. lat., 124°38.72' W. long.;
- (52) 44°13.52' N. lat., 124°40.45' W. long.;
- (53) 44°10.97' N. lat., 124°38.78' W. long.;
- (54) 44°08.71' N. lat., 124°33.54' W. long.;
- (55) 44°04.91' N. lat., 124°24.55' W. long.;
- (56) 43°57.49' N. lat., 124°20.05' W. long.;
- (57) 43°50.26' N. lat., 124°21.85' W. long.;
- (58) 43°41.69' N. lat., 124°21.94' W. long.;
- (59) 43°35.51' N. lat., 124°21.51' W. long.;
- (60) 43°25.77' N. lat., 124°28.47' W. long.;
- (61) 43°20.83' N. lat., 124°31.26' W. long.;
- (62) 43°20.25' N. lat., 124°31.59' W. long.;
- (63) 43°12.73' N. lat., 124°36.68' W. long.;
- (64) 43°08.08' N. lat., 124°36.10' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (65) 43°00.33' N. lat., 124°37.57' W. long.;
- (66) 42°53.99' N. lat., 124°41.03' W. long.;
- (67) 42°50.00' N. lat., 124°41.09' W. long.;
- (68) 42°46.66' N. lat., 124°41.13' W. long.;
- (69) 42°41.74' N. lat., 124°37.46' W. long.;
- (70) 42°40.50' N. lat., 124°37.39' W. long.;
- (71) 42°37.42' N. lat., 124°37.22' W. long.;
- (72) 42°27.35' N. lat., 124°39.91' W. long.;
- (73) 42°23.94' N. lat., 124°38.29' W. long.;
- (74) 42°17.72' N. lat., 124°31.10' W. long.;
- (75) 42°10.36' N. lat., 124°29.11' W. long.;
- (76) 42°00.00' N. lat., 124°28.00' W. long.;
- (77) 41°54.87' N. lat., 124°28.50' W. long.;
- (78) 41°45.80' N. lat., 124°23.89' W. long.;
- (79) 41°34.40' N. lat., 124°24.03' W. long.;
- (80) 41°28.33' N. lat., 124°25.46' W. long.;
- (81) 41°15.80' N. lat., 124°18.90' W. long.;
- (82) 41°09.77' N. lat., 124°17.99' W. long.;
- (83) 41°02.26' N. lat., 124°18.71' W. long.;
- (84) 40°53.54' N. lat., 124°21.18' W. long.;
- (85) 40°49.93' N. lat., 124°23.02' W. long.;
- (86) 40°43.15' N. lat., 124°28.74' W. long.;
- (87) 40°40.19' N. lat., 124°29.07' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (88) 40°36.77' N. lat., 124°27.61' W. long.;
- (89) 40°34.26' N lat., 124°29.52' W long.;
- (90) 40°33.15' N. lat., 124°33.46' W. long.;
- (91) 40°30.00' N. lat., 124°35.84' W. long.;
- (92) 40°24.72' N. lat., 124°33.06' W. long.;
- (93) 40°23.91' N. lat., 124°31.28' W. long.;
- (94) 40°23.67' N. lat., 124°28.35' W. long.;
- (95) 40°22.53' N. lat., 124°24.72' W. long.;
- (96) 40°21.58' N lat., 124°24.87' W long.;
- (97) 40°21.02' N. lat., 124°27.70' W. long.;
- (98) 40°19.75' N. lat., 124°27.06' W. long.;
- (99) 40°18.23' N. lat., 124°25.30' W. long.;
- (100) 40°18.60' N. lat., 124°22.86' W. long.;
- (101) 40°15.43' N. lat., 124°25.37' W. long.;
- (102) 40°15.55' N. lat., 124°28.16' W. long.;
- (103) 40°11.27' N. lat., 124°22.56' W. long.;
- (104) 40°10.00' N. lat., 124°19.97' W. long.;
- (105) 40°09.20' N. lat., 124°15.81' W. long.;
- (106) 40°07.51' N. lat., 124°15.29' W. long.;
- (107) 40°05.22' N. lat., 124°10.06' W. long.;
- (108) 40°06.51' N. lat., 124°08.01' W. long.;
- (109) 40°00.72' N. lat., 124°08.45' W. long.;
- (110) 39°56.60' N. lat., 124°07.12' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (111) 39°52.58' N. lat., 124°03.57' W. long.;
- (112) 39°50.65' N. lat., 123°57.98' W. long.;
- (113) 39°40.16' N. lat., 123°52.41' W. long.;
- (114) 39°30.12' N. lat., 123°52.92' W. long.;
- (115) 39°24.53' N. lat., 123°55.16' W. long.;
- (116) 39°11.58' N. lat., 123°50.93' W. long.;
- (117) 38°57.50' N. lat., 123°51.14' W. long.;
- (118) 38°55.13' N. lat., 123°51.14' W. long.;
- (119) 38°28.58' N. lat., 123°22.84' W. long.;
- (120) 38°08.57' N. lat., 123°14.74' W. long.;
- (121) 38°00.00' N. lat., 123°15.61' W. long.;
- (122) 37°56.98' N. lat., 123°21.82' W. long.;
- (123) 37°49.65' N. lat., 123°17.48' W. long.;
- (124) 37°36.41' N. lat., 122°58.09' W. long.;
- (125) 37°11.00' N. lat., 122°40.22' W. long.;
- (126) 37°07.00' N. lat., 122°37.64' W. long.;
- (127) 37°02.08' N. lat., 122°25.49' W. long.;
- (128) 36°48.20' N. lat., 122°03.32' W. long.;
- (129) 36°51.42' N lat., 121°57.62' W long.;
- (130) 36°48.13' N. lat., 121°58.16' W. long.;
- (131) 36°48.84' N. lat., 121°50.06' W. long.;
- (132) 36°45.38' N. lat., 121°53.56' W. long.;
- (133) 36°45.13' N. lat., 121°57.06' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (134) 36°36.86' N. lat., 122°00.81' W. long.;
- (135) 36°32.77' N. lat., 121°58.90' W. long.;
- (136) 36°33.03' N. lat., 121°57.63' W. long.;
- (137) 36°31.87' N. lat., 121°56.10' W. long.;
- (138) 36°31.59' N. lat., 121°58.27' W. long.;
- (139) 36°23.26' N. lat., 121°57.70' W. long.;
- (140) 36°16.80' N. lat., 122°01.76' W. long.;
- (141) 36°14.33' N. lat., 121°57.80' W. long.;
- (142) 36°14.67' N. lat., 121°54.41' W. long.;
- (143) 36°10.30' N lat., 121°43.00' W long.;
- (144) 36°02.54' N lat., 121°36.43' W long.;
- (145) 36°01.09' N. lat., 121°36.41' W. long.;
- (146) 35°58.21' N lat., 121°32.88' W long.;
- (147) 35°40.38' N. lat., 121°22.59' W. long.;
- (148) 35°26.31' N. lat., 121°03.73' W. long.;
- (149) 35°01.36' N. lat., 120°49.02' W. long.;
- (150) 34°39.52' N. lat., 120°48.72' W. long.;
- (151) 34°31.26' N. lat., 120°44.12' W. long.;
- (152) 34°27.00' N. lat., 120°36.00' W. long.;
- (153) 34°23.00' N. lat., 120°25.32' W. long.;
- (154) 34°25.65' N. lat., 120°17.20' W. long.;
- (155) 34°23.05' N lat., 119°56.25' W long.;
- (156) 34°18.73' N. lat., 119°41.89' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (157) 34°11.18' N. lat., 119°31.21' W. long.;
- (158) 34°10.01' N. lat., 119°25.84' W. long.;
- (159) 34°03.80' N lat., 119°12.70' W long.;
- (160) 34°03.58' N. lat., 119°06.71' W. long.;
- (161) 34°04.52' N. lat., 119°04.89' W. long.;
- (162) 34°01.28' N. lat., 119°00.27' W. long.;
- (163) 34°00.20' N. lat., 119°03.18' W. long.;
- (164) 33°59.60' N. lat., 119°03.14' W. long.;
- (165) 33°59.45' N. lat., 119°00.87' W. long.;
- (166) 34°00.71' N. lat., 118°59.07' W. long.;
- (167) 33°59.05' N. lat., 118°47.34' W. long.;
- (168) 33°58.86' N. lat., 118°36.24' W. long.;
- (169) 33°55.20' N lat., 118°33.18' W long.;
- (170) 33°53.63' N. lat., 118°37.88' W. long.;
- (171) 33°51.22' N. lat., 118°36.13' W. long.;
- (172) 33°50.19' N. lat., 118°32.19' W. long.;
- (173) 33°51.28' N. lat., 118°29.12' W. long.;
- (174) 33°49.89' N. lat., 118°28.04' W. long.;
- (175) 33°49.93' N lat., 118°26.36' W long.;
- (176) 33°50.68' N lat., 118°26.15' W long.;
- (177) 33°50.06' N. lat., 118°24.79' W. long.;
- (178) 33°48.48' N. lat., 118°26.86' W. long.;
- (179) 33°47.75' N. lat., 118°30.21' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (180) 33°44.10' N. lat., 118°25.25' W. long.;
- (181) 33°41.77' N. lat., 118°20.32' W. long.;
- (182) 33°38.17' N. lat., 118°15.69' W. long.;
- (183) 33°37.48' N. lat., 118°16.72' W. long.;
- (184) 33°35.80' N. lat., 118°16.65' W. long.;
- (185) 33°33.92' N. lat., 118°11.36' W. long.;
- (186) 33°34.09' N. lat., 118°08.15' W. long.;
- (187) 33°35.73' N. lat., 118°05.01' W. long.;
- (188) 33°33.75' N. lat., 117°59.82' W. long.;
- (189) 33°35.25' N. lat., 117°55.89' W. long.;
- (190) 33°35.03' N. lat., 117°53.80' W. long.;
- (191) 33°31.37' N. lat., 117°48.15' W. long.;
- (192) 33°27.49' N. lat., 117°44.85' W. long.;
- (193) 33°16.63' N. lat., 117°34.01' W. long.;
- (194) 33°07.21' N. lat., 117°21.96' W. long.;
- (195) 33°03.35' N. lat., 117°21.22' W. long.;
- (196) 33°02.14' N. lat., 117°20.26' W. long.;
- (197) 32°59.87' N. lat., 117°19.16' W. long.;
- (198) 32°57.39' N. lat., 117°18.72' W. long.;
- (199) 32°56.00' N. lat., 117°19.16' W. long.;
- (200) 32°55.31' N. lat., 117°18.80' W. long.;
- (201) 32°54.38' N. lat., 117°17.09' W. long.;
- (202) 32°52.81' N. lat., 117°16.94' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (203) 32°52.56' N. lat., 117°19.30' W. long.;
- (204) 32°50.86' N. lat., 117°20.98' W. long.;
- (205) 32°46.96' N. lat., 117°22.69' W. long.;
- (206) 32°45.58' N. lat., 117°22.38' W. long.;
- (207) 32°44.89' N. lat., 117°21.89' W. long.;
- (208) 32°43.03' N lat., 117°20.43' W long.;
- (209) 32°41.52' N. lat., 117°20.12' W. long.;
- (210) 32°37.00' N. lat., 117°20.10' W. long.;
- (211) 32°34.76' N. lat., 117°18.77' W. long.; and
- (212) 32°33.70' N. lat., 117°18.46' W. long.

(k) The 60 fm (110 m) depth contour around the northern Channel Islands off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 34°09.83' N. lat., 120°25.61' W. long.;
- (2) 34°07.03' N. lat., 120°16.43' W. long.;
- (3) 34°06.38' N. lat., 120°04.00' W. long.;
- (4) 34°07.90' N. lat., 119°55.12' W. long.;
- (5) 34°05.07' N. lat., 119°37.33' W. long.;
- (6) 34°05.04' N. lat., 119°32.80' W. long.;
- (7) 34°04.00' N. lat., 119°26.70' W. long.;
- (8) 34°02.27' N. lat., 119°18.73' W. long.;
- (9) 34°00.98' N. lat., 119°19.10' W. long.;
- (10) 33°59.44' N. lat., 119°21.89' W. long.;
- (11) 33°58.70' N. lat., 119°32.22' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (12) 33°57.81' N. lat., 119°33.72' W. long.;
- (13) 33°57.65' N. lat., 119°35.94' W. long.;
- (14) 33°56.14' N. lat., 119°41.09' W. long.;
- (15) 33°55.84' N. lat., 119°48.00' W. long.;
- (16) 33°57.22' N. lat., 119°52.09' W. long.;
- (17) 33°59.22' N lat., 119°55.49' W long.;
- (18) 33°57.73' N. lat., 119°55.06' W. long.;
- (19) 33°56.48' N. lat., 119°53.80' W. long.;
- (20) 33°49.29' N. lat., 119°55.76' W. long.;
- (21) 33°48.11' N. lat., 119°59.72' W. long.;
- (22) 33°49.14' N. lat., 120°03.58' W. long.;
- (23) 33°52.95' N. lat., 120°10.00' W. long.;
- (24) 33°56.00' N. lat., 120°17.00' W. long.;
- (25) 34°00.12' N. lat., 120°28.12' W. long.;
- (26) 34°08.23' N. lat., 120°36.25' W. long.;
- (27) 34°08.80' N. lat., 120°34.58' W. long.; and
- (28) 34°09.83' N. lat., 120°25.61' W. long.

(l) The 60 fm (110 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°04.44' N. lat., 118°37.61' W. long.;
- (2) 33°02.56' N lat., 118°34.19' W long.;
- (3) 32°55.54' N. lat., 118°28.87' W. long.;
- (4) 32°55.01' N lat., 118°27.70' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (5) 32°49.77' N lat., 118°20.92' W long.;
- (6) 32°48.38' N lat., 118°20.02' W long.;
- (7) 32°47.60' N. lat., 118°22.00' W. long.;
- (8) 32°44.59' N. lat., 118°24.52' W. long.;
- (9) 32°49.97' N. lat., 118°31.52' W. long.;
- (10) 32°53.62' N. lat., 118°32.94' W. long.;
- (11) 32°55.63' N. lat., 118°34.82' W. long.;
- (12) 33°00.71' N. lat., 118°38.42' W. long.;
- (13) 33°03.49' N. lat., 118°38.81' W. long.; and
- (14) 33°04.44' N. lat., 118°37.61' W. long.

(m) The 60 fm (110 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.15' N. lat., 118°38.17' W. long.;
- (2) 33°29.23' N. lat., 118°36.27' W. long.;
- (3) 33°28.85' N. lat., 118°30.85' W. long.;
- (4) 33°26.69' N. lat., 118°27.37' W. long.;
- (5) 33°26.30' N. lat., 118°25.38' W. long.;
- (6) 33°25.39' N lat., 118°22.80' W long.;
- (7) 33°22.60' N. lat., 118°18.82' W. long.;
- (8) 33°19.49' N. lat., 118°16.91' W. long.;
- (9) 33°17.13' N. lat., 118°16.58' W. long.;
- (10) 33°16.65' N. lat., 118°17.71' W. long.;
- (11) 33°18.35' N. lat., 118°27.86' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (12) 33°20.07' N. lat., 118°32.34' W. long.;
- (13) 33°21.82' N. lat., 118°32.08' W. long.;
- (14) 33°23.15' N. lat., 118°29.89' W. long.;
- (15) 33°24.99' N. lat., 118°32.25' W. long.;
- (16) 33°25.73' N. lat., 118°34.88' W. long.; and
- (17) 33°28.15' N. lat., 118°38.17' W. long.

(n) The 60 fm (110 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°32.34' N lat., 119°3.85' W long.;
- (2) 33°28.79' N lat., 119°6.76' W long.;
- (3) 33°26.46' N lat., 119°3.12' W long.;
- (4) 33°27.08' N lat., 119°0.37' W long.;
- (5) 33°28.86' N lat., 118°59.31' W long.;
- (6) 33°30.82' N lat., 119° 0.97' W long.; and
- (7) 33°32.34' N lat., 119°3.85' W long.

(o) The 60 fm (91 m) depth contour around Tanner Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°45.65' N lat., 119°13.29' W long.;
- (2) 32°44.21' N lat., 119°15.68' W long.;
- (3) 32°37.4' N lat., 119°4.89' W long.;
- (4) 32°41.42' N lat., 119°3.32' W long.;
- (5) 32°45.66' N lat., 119°12.1' W long.; and
- (6) 32°45.65' N lat., 119°13.29' W long.

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(p) The 60 fm (110 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°26.41' N lat., 119°39.84' W long.;
- (2) 33°22.94' N lat., 119°47.34' W long.;
- (3) 33°16.39' N lat., 119°42.64' W long.;
- (4) 33°11.86' N lat., 119°29.61' W long.;
- (5) 33°11.52' N lat., 119°27.25' W long.;
- (6) 33°12.97' N lat., 119°16.3' W long.;
- (7) 33°14.48' N lat., 119°17.42' W long.;
- (8) 33°17.23' N lat., 119°23.14' W long.;
- (9) 33°21.21' N lat., 119°27.84' W long.;
- (10) 33°22.65' N lat., 119°34.31' W long.; and
- (11) 33°26.41' N lat., 119°39.84' W long.

(q) The 60 fm (110 m) depth contour around Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°36.79' N lat., 119°18.81' W long.;
- (2) 32°31.94' N lat., 119°20.75' W long.;
- (3) 32°29.5' N lat., 119°15' W long.;
- (4) 32°27.95' N lat., 119°15.12' W long.;
- (5) 32°24.03' N lat., 119°3.72' W long.;
- (6) 32°24.46' N lat., 118°59.56' W long.;
- (7) 32°25.42' N lat., 118°59.42' W long.;
- (8) 32°27.41' N lat., 119°1.99' W long.; and
- (9) 32°36.79' N lat., 119°18.81' W long.

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(r) The 75–fm (137–m) depth contour used between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°16.80' N. lat., 125°34.90' W. long.;
- (2) 48°14.50' N. lat., 125°29.50' W. long.;
- (3) 48°12.08' N. lat., 125°28.00' W. long.;
- (4) 48°10.00' N. lat., 125°27.99' W. long.;
- (5) 48°09.00' N. lat., 125°28.00' W. long.;
- (6) 48°07.80' N. lat., 125°31.70' W. long.;
- (7) 48°04.28' N. lat., 125°29.00' W. long.;
- (8) 48°02.50' N. lat., 125°25.70' W. long.;
- (9) 48°10.00' N. lat., 125°20.19' W. long.;
- (10) 48°21.70' N. lat., 125°17.56' W. long.;
- (11) 48°23.12' N. lat., 125°10.25' W. long.;
- (12) 48°21.77' N. lat., 125°02.59' W. long.;
- (13) 48°23.00' N. lat., 124°59.30' W. long.;
- (14) 48°23.90' N. lat., 124°54.37' W. long.;
- (15) 48°23.05' N. lat., 124°48.80' W. long.;
- (16) 48°17.10' N. lat., 124°54.82' W. long.;
- (17) 48°10.00' N. lat., 124°57.54' W. long.;
- (18) 48°05.10' N. lat., 124°59.40' W. long.;
- (19) 48°04.50' N. lat., 125°02.00' W. long.;
- (20) 48°04.70' N. lat., 125°04.08' W. long.;
- (21) 48°05.20' N. lat., 125°04.90' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (22) 48°06.25' N. lat., 125°06.40' W. long.;
- (23) 48°05.91' N. lat., 125°08.30' W. long.;
- (24) 48°07.00' N. lat., 125°09.80' W. long.;
- (25) 48°06.93' N. lat., 125°11.48' W. long.;
- (26) 48°04.98' N. lat., 125°10.02' W. long.;
- (27) 47°54.00' N. lat., 125°04.98' W. long.;
- (28) 47°44.52' N. lat., 125°00.00' W. long.;
- (29) 47°42.00' N. lat., 124°58.98' W. long.;
- (30) 47°35.52' N. lat., 124°55.50' W. long.;
- (31) 47°22.02' N. lat., 124°44.40' W. long.;
- (32) 47°16.98' N. lat., 124°45.48' W. long.;
- (33) 47°10.98' N. lat., 124°48.48' W. long.;
- (34) 47°04.98' N. lat., 124°49.02' W. long.;
- (35) 46°57.98' N. lat., 124°46.50' W. long.;
- (36) 46°54.00' N. lat., 124°45.00' W. long.;
- (37) 46°48.48' N. lat., 124°44.52' W. long.;
- (38) 46°40.02' N. lat., 124°36.00' W. long.;
- (39) 46°38.17' N. lat., 124°33.20' W. long.;
- (40) 46°34.09' N. lat., 124°27.03' W. long.;
- (41) 46°24.64' N. lat., 124°30.33' W. long.;
- (42) 46°19.98' N. lat., 124°36.00' W. long.;
- (43) 46°18.14' N. lat., 124°34.26' W. long.;
- (44) 46°18.72' N. lat., 124°22.68' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (45) 46°16.00' N. lat., 124°19.49' W. long.;
- (46) 46°14.63' N. lat., 124°22.54' W. long.;
- (47) 46°11.08' N. lat., 124°30.74' W. long.;
- (48) 46°04.28' N. lat., 124°31.49' W. long.;
- (49) 45°55.97' N. lat., 124°19.95' W. long.;
- (50) 45°46.00' N. lat., 124°16.41' W. long.;
- (51) 45°44.97' N. lat., 124°15.95' W. long.;
- (52) 45°43.14' N. lat., 124°21.86' W. long.;
- (53) 45°34.45' N. lat., 124°14.44' W. long.;
- (54) 45°20.25' N. lat., 124°12.23' W. long.;
- (55) 45°15.49' N. lat., 124°11.49' W. long.;
- (56) 45°03.83' N. lat., 124°13.75' W. long.;
- (57) 44°57.31' N. lat., 124°15.03' W. long.;
- (58) 44°43.90' N. lat., 124°28.88' W. long.;
- (59) 44°28.64' N. lat., 124°35.67' W. long.;
- (60) 44°25.31' N. lat., 124°43.08' W. long.;
- (61) 44°16.28' N. lat., 124°47.86' W. long.;
- (62) 44°13.47' N. lat., 124°54.08' W. long.;
- (63) 44°02.88' N. lat., 124°53.96' W. long.;
- (64) 44°00.14' N. lat., 124°55.25' W. long.;
- (65) 43°57.68' N. lat., 124°55.48' W. long.;
- (66) 43°56.66' N. lat., 124°55.45' W. long.;
- (67) 43°57.50' N. lat., 124°41.23' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (68) 44°01.79' N. lat., 124°38.00' W. long.;
- (69) 44°02.17' N. lat., 124°32.62' W. long.;
- (70) 43°58.15' N. lat., 124°30.39' W. long.;
- (71) 43°53.25' N. lat., 124°31.39' W. long.;
- (72) 43°35.56' N. lat., 124°28.17' W. long.;
- (73) 43°21.84' N. lat., 124°36.07' W. long.;
- (74) 43°20.83' N. lat., 124°35.49' W. long.;
- (75) 43°19.73' N. lat., 124°34.87' W. long.;
- (76) 43°09.38' N. lat., 124°39.29' W. long.;
- (77) 43°07.11' N. lat., 124°37.66' W. long.;
- (78) 42°56.27' N. lat., 124°43.28' W. long.;
- (79) 42°50.00' N. lat., 124°42.30' W. long.;
- (80) 42°45.01' N. lat., 124°41.50' W. long.;
- (81) 42°40.50' N. lat., 124°39.46' W. long.;
- (82) 42°39.71' N. lat., 124°39.11' W. long.;
- (83) 42°32.87' N. lat., 124°40.13' W. long.;
- (84) 42°32.30' N. lat., 124°39.04' W. long.;
- (85) 42°26.96' N. lat., 124°44.30' W. long.;
- (86) 42°24.11' N. lat., 124°42.16' W. long.;
- (87) 42°21.10' N. lat., 124°35.46' W. long.;
- (88) 42°14.72' N. lat., 124°32.30' W. long.;
- (89) 42°13.67' N. lat., 124°32.29' W. long.;
- (90) 42°09.25' N. lat., 124°32.04' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (91) 42°01.88' N. lat., 124°32.71' W. long.;
- (92) 42°00.00' N. lat., 124°32.02' W. long.;
- (93) 41°46.18' N. lat., 124°26.60' W. long.;
- (94) 41°29.22' N. lat., 124°28.04' W. long.;
- (95) 41°09.62' N. lat., 124°19.75' W. long.;
- (96) 40°50.71' N. lat., 124°23.80' W. long.;
- (97) 40°43.35' N. lat., 124°29.30' W. long.;
- (98) 40°40.24' N. lat., 124°29.86' W. long.;
- (99) 40°39.40' N lat., 124°28.90' W long.;
- (100) 40°36.96' N lat., 124°28.02' W long.;
- (101) 40°34.42' N. lat., 124°29.65' W. long.;
- (102) 40°34.74' N. lat., 124°34.61' W. long.;
- (103) 40°31.70' N. lat., 124°37.13' W. long.;
- (104) 40°30.00' N. lat., 124°36.50' W. long.;
- (105) 40°25.03' N. lat., 124°34.77' W. long.;
- (106) 40°23.58' N. lat., 124°31.49' W. long.;
- (107) 40°23.64' N. lat., 124°28.35' W. long.;
- (108) 40°22.53' N. lat., 124°24.76' W. long.;
- (109) 40°21.65' N lat., 124°24.89' W long.;
- (110) 40°21.74' N. lat., 124°27.63' W. long.;
- (111) 40°19.76' N. lat., 124°28.15' W. long.;
- (112) 40°18.00' N. lat., 124°25.38' W. long.;
- (113) 40°18.54' N. lat., 124°22.94' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (114) 40°15.55' N. lat., 124°25.75' W. long.;
- (115) 40°16.06' N. lat., 124°30.48' W. long.;
- (116) 40°15.75' N. lat., 124°31.69' W. long.;
- (117) 40°10.00' N. lat., 124°21.28' W. long.;
- (118) 40°08.37' N. lat., 124°17.99' W. long.;
- (119) 40°09.00' N. lat., 124°15.77' W. long.;
- (120) 40°06.93' N. lat., 124°16.49' W. long.;
- (121) 40°03.60' N. lat., 124°11.60' W. long.;
- (122) 40°06.20' N. lat., 124°08.23' W. long.;
- (123) 40°00.94' N. lat., 124°08.57' W. long.;
- (124) 40°00.01' N. lat., 124°09.84' W. long.;
- (125) 39°57.75' N. lat., 124°09.53' W. long.;
- (126) 39°55.56' N. lat., 124°07.67' W. long.;
- (127) 39°52.21' N. lat., 124°05.54' W. long.;
- (128) 39°48.07' N. lat., 123°57.48' W. long.;
- (129) 39°41.60' N. lat., 123°55.12' W. long.;
- (130) 39°30.39' N. lat., 123°55.03' W. long.;
- (131) 39°29.48' N. lat., 123°56.12' W. long.;
- (132) 39°13.76' N. lat., 123°54.65' W. long.;
- (133) 39°05.21' N. lat., 123°55.38' W. long.;
- (134) 38°57.50' N. lat., 123°54.50' W. long.;
- (135) 38°55.90' N. lat., 123°54.35' W. long.;
- (136) 38°48.59' N. lat., 123°49.61' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (137) 38°28.82' N. lat., 123°27.44' W. long.;
- (138) 38°09.70' N. lat., 123°18.66' W. long.;
- (139) 38°04.16' N lat., 123°19.05' W long.;
- (140) 38°03.18' N lat., 123°20.77' W long.;
- (141) 38°00.00' N lat., 123°23.08' W long.;
- (142) 37°55.07' N lat., 123°26.81' W long.;
- (143) 37°52.79' N. lat., 123°23.85' W. long.;
- (144) 37°49.13' N. lat., 123°18.83' W. long.;
- (145) 37°46.01' N. lat., 123°12.28' W. long.;
- (146) 37°35.67' N. lat., 123°00.33' W. long.;
- (147) 37°28.20' N. lat., 122°54.92' W. long.;
- (148) 37°27.34' N. lat., 122°52.91' W. long.;
- (149) 37°26.45' N. lat., 122°52.95' W. long.;
- (150) 37°26.06' N. lat., 122°51.17' W. long.;
- (151) 37°23.07' N. lat., 122°51.34' W. long.;
- (152) 37°11.00' N. lat., 122°43.89' W. long.;
- (153) 37°07.00' N. lat., 122°41.06' W. long.;
- (154) 37°04.49' N lat., 122°38.50' W long.;
- (155) 37°00.64' N. lat., 122°33.26' W. long.;
- (156) 36°59.15' N. lat., 122°27.84' W. long.;
- (157) 37°01.16' N lat., 122°24.50' W long.;
- (158) 36°58.75' N. lat., 122°23.81' W. long.;
- (159) 36°59.17' N. lat., 122°21.44' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (160) 36°57.51' N. lat., 122°20.69' W. long.;
- (161) 36°51.46' N. lat., 122°10.01' W. long.;
- (162) 36°48.43' N. lat., 122°06.47' W. long.;
- (163) 36°48.66' N. lat., 122°04.99' W. long.;
- (164) 36°47.75' N. lat., 122°03.33' W. long.;
- (165) 36°51.23' N. lat., 121°57.79' W. long.;
- (166) 36°49.80' N. lat., 121°57.93' W. long.;
- (167) 36°48.84' N. lat., 121°58.68' W. long.;
- (168) 36°47.89' N. lat., 121°58.53' W. long.;
- (169) 36°48.66' N. lat., 121°50.49' W. long.;
- (170) 36°45.56' N. lat., 121°54.11' W. long.;
- (171) 36°45.30' N. lat., 121°57.62' W. long.;
- (172) 36°38.54' N. lat., 122°01.13' W. long.;
- (173) 36°35.76' N. lat., 122°00.87' W. long.;
- (174) 36°32.58' N. lat., 121°59.12' W. long.;
- (175) 36°32.95' N. lat., 121°57.62' W. long.;
- (176) 36°31.96' N. lat., 121°56.27' W. long.;
- (177) 36°31.74' N. lat., 121°58.24' W. long.;
- (178) 36°30.57' N. lat., 121°59.66' W. long.;
- (179) 36°27.80' N. lat., 121°59.30' W. long.;
- (180) 36°26.52' N. lat., 121°58.09' W. long.;
- (181) 36°23.65' N. lat., 121°58.94' W. long.;
- (182) 36°20.93' N. lat., 122°00.28' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (183) 36°17.49' N. lat., 122°03.08' W. long.;
- (184) 36°14.21' N. lat., 121°57.80' W. long.;
- (185) 36°14.53' N. lat., 121°54.99' W. long.;
- (186) 36°10.28' N lat., 121°43.06' W long.;
- (187) 36°02.50' N lat., 121°36.47' W long.;
- (188) 36°01.04' N. lat., 121°36.47' W. long.;
- (189) 36°00.00' N lat., 121°35.32' W long.;
- (190) 35°58.20' N lat., 121°32.97' W long.;
- (191) 35°39.35' N. lat., 121°22.63' W. long.;
- (192) 35°25.09' N. lat., 121°03.02' W. long.;
- (193) 35°10.84' N. lat., 120°55.90' W. long.;
- (194) 35°04.35' N. lat., 120°51.62' W. long.;
- (195) 34°55.25' N. lat., 120°49.36' W. long.;
- (196) 34°47.95' N. lat., 120°50.76' W. long.;
- (197) 34°39.27' N. lat., 120°49.16' W. long.;
- (198) 34°31.05' N. lat., 120°44.71' W. long.;
- (199) 34°27.00' N. lat., 120°36.54' W. long.;
- (200) 34°22.60' N. lat., 120°25.41' W. long.;
- (201) 34°25.45' N. lat., 120°17.41' W. long.;
- (202) 34°22.94' N. lat., 119°56.40' W. long.;
- (203) 34°18.37' N. lat., 119°42.01' W. long.;
- (204) 34°11.22' N. lat., 119°32.47' W. long.;
- (205) 34°09.58' N. lat., 119°25.94' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (206) 34°03.70' N lat., 119°12.77' W long.;
- (207) 34°03.57' N. lat., 119°06.72' W. long.;
- (208) 34°04.44' N lat., 119°04.90' W long.;
- (209) 34°02.94' N lat., 119°02.89' W long.;
- (210) 34°01.30' N lat., 119°00.48' W long.;
- (211) 34°00.22' N. lat., 119°03.20' W. long.;
- (212) 33°59.56' N. lat., 119°03.36' W. long.;
- (213) 33°59.35' N. lat., 119°00.92' W. long.;
- (214) 34°00.49' N. lat., 118°59.08' W. long.;
- (215) 33°58.99' N lat., 118°47.33' W long.;
- (216) 33°58.73' N. lat., 118°36.45' W. long.;
- (217) 33°55.24' N. lat., 118°33.42' W. long.;
- (218) 33°53.71' N. lat., 118°38.01' W. long.;
- (219) 33°51.19' N. lat., 118°36.50' W. long.;
- (220) 33°49.85' N lat., 118°32.31' W long.;
- (221) 33°49.61' N lat., 118°28.07' W long.;
- (222) 33°49.77' N lat., 118°26.34' W long.;
- (223) 33°50.36' N. lat., 118°25.84' W. long.;
- (224) 33°49.92' N. lat., 118°25.05' W. long.;
- (225) 33°48.70' N. lat., 118°26.70' W. long.;
- (226) 33°47.72' N. lat., 118°30.48' W. long.;
- (227) 33°44.07' N lat., 118°25.28' W long.;
- (228) 33°41.62' N. lat., 118°20.31' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (229) 33°38.15' N. lat., 118°15.85' W. long.;
- (230) 33°37.53' N. lat., 118°16.82' W. long.;
- (231) 33°35.76' N. lat., 118°16.75' W. long.;
- (232) 33°33.76' N. lat., 118°11.37' W. long.;
- (233) 33°33.76' N. lat., 118°07.94' W. long.;
- (234) 33°35.59' N. lat., 118°05.05' W. long.;
- (235) 33°33.67' N. lat., 117°59.98' W. long.;
- (236) 33°34.98' N. lat., 117°55.66' W. long.;
- (237) 33°34.84' N. lat., 117°53.83' W. long.;
- (238) 33°31.43' N. lat., 117°48.76' W. long.;
- (239) 33°16.61' N. lat., 117°34.49' W. long.;
- (240) 33°07.43' N. lat., 117°22.40' W. long.;
- (241) 33°02.93' N. lat., 117°21.12' W. long.;
- (242) 33°02.09' N. lat., 117°20.28' W. long.;
- (243) 32°59.91' N. lat., 117°19.28' W. long.;
- (244) 32°57.27' N. lat., 117°18.82' W. long.;
- (245) 32°56.17' N. lat., 117°19.43' W. long.;
- (246) 32°55.22' N. lat., 117°19.09' W. long.;
- (247) 32°54.30' N. lat., 117°17.13' W. long.;
- (248) 32°52.89' N. lat., 117°17.03' W. long.;
- (249) 32°52.61' N. lat., 117°19.50' W. long.;
- (250) 32°50.85' N. lat., 117°21.14' W. long.;
- (251) 32°47.11' N. lat., 117°22.95' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(252) 32°45.66' N. lat., 117°22.60' W. long.;

(253) 32°42.99' N. lat., 117°20.70' W. long.;

(254) 32°40.72' N. lat., 117°20.23' W. long.;

(255) 32°38.11' N. lat., 117°20.59' W. long.; and

(256) 32°33.83' N. lat., 117°19.18' W. long.

(s) The 75 fm (137 m) depth contour around the northern Channel Islands off the state of California is defined by straight lines connecting all of the following points in the order stated:

(1) 34°10.82' N. lat., 120°33.26' W. long.;

(2) 34°11.78' N. lat., 120°28.12' W. long.;

(3) 34°08.65' N. lat., 120°18.46' W. long.;

(4) 34°07.01' N. lat., 120°10.46' W. long.;

(5) 34°06.56' N. lat., 120°04.00' W. long.;

(6) 34°08.11' N. lat., 119°55.01' W. long.;

(7) 34°05.18' N. lat., 119°37.94' W. long.;

(8) 34°05.22' N. lat., 119°35.52' W. long.;

(9) 34°05.12' N. lat., 119°32.74' W. long.;

(10) 34°04.32' N. lat., 119°27.32' W. long.;

(11) 34°02.32' N. lat., 119°18.46' W. long.;

(12) 34°00.95' N. lat., 119°18.95' W. long.;

(13) 33°59.40' N. lat., 119°21.74' W. long.;

(14) 33°58.70' N. lat., 119°32.21' W. long.;

(15) 33°57.77' N lat., 119°33.49' W long.;

(16) 33°57.64' N lat., 119°35.78' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (17) 33°56.12' N. lat., 119°41.10' W. long.;
- (18) 33°55.74' N. lat., 119°48.00' W. long.;
- (19) 33°56.91' N. lat., 119°52.04' W. long.;
- (20) 33°59.06' N. lat., 119°55.38' W. long.;
- (21) 33°57.82' N. lat., 119°54.99' W. long.;
- (22) 33°56.58' N. lat., 119°53.75' W. long.;
- (23) 33°54.43' N. lat., 119°54.07' W. long.;
- (24) 33°52.67' N. lat., 119°54.78' W. long.;
- (25) 33°48.33' N. lat., 119°55.09' W. long.;
- (26) 33°47.28' N. lat., 119°57.30' W. long.;
- (27) 33°47.36' N. lat., 120°00.39' W. long.;
- (28) 33°49.16' N. lat., 120°05.06' W. long.;
- (29) 33°51.69' N. lat., 120°07.98' W. long.;
- (30) 33°58.11' N. lat., 120°25.59' W. long.;
- (31) 34°02.15' N. lat., 120°32.70' W. long.;
- (32) 34°08.86' N. lat., 120°37.12' W. long.; and
- (33) 34°10.82' N. lat., 120°33.26' W. long.

(t) The 75 fm (137 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°04.54' N. lat., 118°37.54' W. long.;
- (2) 33°02.56' N. lat., 118°34.12' W. long.;
- (3) 32°55.57' N. lat., 118°28.84' W. long.;
- (4) 32°55.02' N. lat., 118°27.69' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (5) 32°49.78' N. lat., 118°20.88' W. long.;
- (6) 32°48.32' N. lat., 118°19.89' W. long.;
- (7) 32°47.41' N. lat., 118°21.98' W. long.;
- (8) 32°44.39' N. lat., 118°24.49' W. long.;
- (9) 32°47.93' N. lat., 118°29.90' W. long.;
- (10) 32°49.69' N. lat., 118°31.52' W. long.;
- (11) 32°53.57' N. lat., 118°33.09' W. long.;
- (12) 32°55.42' N. lat., 118°35.17' W. long.;
- (13) 33°00.49' N. lat., 118°38.56' W. long.;
- (14) 33°03.23' N. lat., 118°39.16' W. long.; and
- (15) 33°04.54' N. lat., 118°37.54' W. long.

(u) The 75 fm (137 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.13' N lat., 118°38.25' W long.;
- (2) 33°29.35' N. lat., 118°36.23' W. long.;
- (3) 33°28.94' N lat., 118°30.81' W long.;
- (4) 33°26.73' N lat., 118°27.35' W long.;
- (5) 33°26.33' N. lat., 118°25.37' W. long.;
- (6) 33°25.42' N lat., 118°22.76' W long.;
- (7) 33°22.47' N. lat., 118°18.53' W. long.;
- (8) 33°19.51' N. lat., 118°16.82' W. long.;
- (9) 33°17.07' N. lat., 118°16.38' W. long.;
- (10) 33°16.58' N. lat., 118°17.61' W. long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (11) 33°18.35' N. lat., 118°27.86' W. long.;
- (12) 33°20.07' N. lat., 118°32.35' W. long.;
- (13) 33°21.82' N. lat., 118°32.09' W. long.;
- (14) 33°23.15' N. lat., 118°29.99' W. long.;
- (15) 33°24.94' N lat., 118°32.29' W long.;
- (16) 33°25.67' N. lat., 118°34.88' W. long.;
- (17) 33°27.57' N. lat., 118°37.90' W. long.; and
- (18) 33°28.13' N lat., 118°38.25' W long.;

(v) The 75 fm (137 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°33.58' N lat., 119°4.84' W long.;
- (2) 33°33.2' N lat., 119°5.37' W long.;
- (3) 33°31.75' N lat., 119°4.61' W long.;
- (4) 33°28.67' N lat., 119°7.06' W long.;
- (5) 33°26.38' N lat., 119°3.24' W long.;
- (6) 33°27.08' N lat., 119°0.26' W long.;
- (7) 33°28.85' N lat., 118°59.21' W long.;
- (8) 33°30.85' N lat., 119°0.94' W long.;
- (9) 33°31.91' N lat., 119°2.98' W long.; and
- (10) 33°33.58' N lat., 119°4.84' W long.

(w) The 75 fm (137 m) depth contour around Tanner Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°45.66' N lat., 119°14.45' W long.;
- (2) 32°44.19' N lat., 119°15.9' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

- (3) 32°37.02' N lat., 119°4.65' W long.;
- (4) 32°41.45' N lat., 119°3.14' W long.;
- (5) 32°45.77' N lat., 119°11.93' W long.; and
- (6) 32°45.66' N lat., 119°14.45' W long.

(x) The 75 fm (137 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°30.94' N lat., 119°45.06' W long.;
- (2) 33°28.59' N lat., 119° 52.02' W long.;
- (3) 33°16.05' N lat., 119°43.86' W long.;
- (4) 33°15.2' N lat., 119°39.36' W long.;
- (5) 33°11.71' N lat., 119°29.48' W long.;
- (6) 33°11.39' N lat., 119°26.58' W long.;
- (7) 33°12.96' N lat., 119°16.23' W long.;
- (8) 33°14.52' N lat., 119°17.42' W long.;
- (9) 33°17.24' N lat., 119°23.09' W long.;
- (10) 33°21.24' N lat., 119°27.83' W long.;
- (11) 33°22.71' N lat., 119°33.54' W long.; and
- (12) 33°30.94' N lat., 119°45.06' W long.

(y) The 75 fm (137 m) depth contour around Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°37.38' N lat., 119°19.45' W long.;
- (2) 32°31.9' N lat., 119°20.9' W long.;
- (3) 32°29.52' N lat.; 119°15.94' W long.;
- (4) 32°29.64' N lat.; 119°15.4' W long.;

§ 660.72 Latitude/longitude coordinates defining the 50 fm (91 m) through 75 fm (137 m) depth contours

(5) 32°29.24' N lat.; 119°15.09' W long.;

(6) 32°27.82' N lat., 119°15.3' W long.;

(7) 32°23.85' N lat., 119°3.95' W long.;

(8) 32°24.53' N lat., 118°58.2' W long.;

(9) 32°27.1' N lat., 119°1.2' W long.; and

(10) 32°37.38' N lat., 119°19.45' W long.

[[69 FR 77051](#), Dec. 23, 2004, as amended at [71 FR 8500](#), Feb. 17, 2006; [71 FR 78672](#), Dec. 29, 2006; [74 FR 9898](#), Mar. 6, 2009. Redesignated at [75 FR 60995](#), Oct. 1, 2010; [76 FR 27530](#), May 11, 2011; [76 FR 54714](#), Sept. 2, 2011; [78 FR 589](#), Jan. 3, 2013; [80 FR 12573](#), Mar. 10, 2015; [82 FR 9640](#), Feb. 7, 2017; [83 FR 63992](#), Dec. 12, 2018; [84 FR 63974](#), Nov. 19, 2019; [87 FR 77016](#), Dec. 16, 2022; [88 FR 83845](#), Dec. 1, 2023]

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours.

Boundaries for some GCAs are defined by straight lines connecting a series of latitude/longitude coordinates. This section provides coordinates for the 100 fm (183 m) through 150 fm (274 m) depth contours.

(a) The 100–fm (183–m) depth contour used between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°15.00' N. lat., 125°41.00' W. long.;
- (2) 48°14.00' N. lat., 125°36.00' W. long.;
- (3) 48°10.00' N. lat., 125°40.00' W. long.;
- (4) 48°09.50' N. lat., 125°40.50' W. long.;
- (5) 48°08.00' N. lat., 125°38.00' W. long.;
- (6) 48°05.00' N. lat., 125°37.25' W. long.;
- (7) 48°02.60' N. lat., 125°34.70' W. long.;
- (8) 47°59.00' N. lat., 125°34.00' W. long.;
- (9) 47°57.26' N. lat., 125°29.82' W. long.;
- (10) 47°59.87' N. lat., 125°25.81' W. long.;
- (11) 48°01.80' N. lat., 125°24.53' W. long.;
- (12) 48°02.08' N. lat., 125°22.98' W. long.;
- (13) 48°02.97' N. lat., 125°22.89' W. long.;
- (14) 48°04.47' N. lat., 125°21.75' W. long.;
- (15) 48°06.11' N. lat., 125°19.33' W. long.;
- (16) 48°07.95' N. lat., 125°18.55' W. long.;
- (17) 48°09.00' N. lat., 125°18.00' W. long.;
- (18) 48°10.00' N. lat., 125°17.81' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (19) 48°11.31' N. lat., 125°17.55' W. long.;
- (20) 48°14.60' N. lat., 125°13.46' W. long.;
- (21) 48°16.67' N. lat., 125°14.34' W. long.;
- (22) 48°18.73' N. lat., 125°14.41' W. long.;
- (23) 48°19.67' N. lat., 125°13.70' W. long.;
- (24) 48°19.70' N. lat., 125°11.13' W. long.;
- (25) 48°22.95' N. lat., 125°10.79' W. long.;
- (26) 48°21.61' N. lat., 125°02.54' W. long.;
- (27) 48°23.00' N. lat., 124°49.34' W. long.;
- (28) 48°17.00' N. lat., 124°56.50' W. long.;
- (29) 48°06.00' N. lat., 125°00.00' W. long.;
- (30) 48°04.62' N. lat., 125°01.73' W. long.;
- (31) 48°04.84' N. lat., 125°04.03' W. long.;
- (32) 48°06.41' N. lat., 125°06.51' W. long.;
- (33) 48°06.00' N. lat., 125°08.00' W. long.;
- (34) 48°07.08' N. lat., 125°09.34' W. long.;
- (35) 48°07.28' N. lat., 125°11.14' W. long.;
- (36) 48°03.45' N. lat., 125°16.66' W. long.;
- (37) 48°02.35' N. lat., 125°17.30' W. long.;
- (38) 48°02.35' N. lat., 125°18.07' W. long.;
- (39) 48°00.00' N. lat., 125°19.30' W. long.;
- (40) 47°59.50' N. lat., 125°18.88' W. long.;
- (41) 47°58.68' N. lat., 125°16.19' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (42) 47°56.62' N. lat., 125°13.50' W. long.;
- (43) 47°53.71' N. lat., 125°11.96' W. long.;
- (44) 47°51.70' N. lat., 125°09.38' W. long.;
- (45) 47°49.95' N. lat., 125°06.07' W. long.;
- (46) 47°49.00' N. lat., 125°03.00' W. long.;
- (47) 47°46.95' N. lat., 125°04.00' W. long.;
- (48) 47°46.58' N. lat., 125°03.15' W. long.;
- (49) 47°44.07' N. lat., 125°04.28' W. long.;
- (50) 47°43.32' N. lat., 125°04.41' W. long.;
- (51) 47°40.95' N. lat., 125°04.14' W. long.;
- (52) 47°39.58' N. lat., 125°04.97' W. long.;
- (53) 47°36.23' N. lat., 125°02.77' W. long.;
- (54) 47°34.28' N. lat., 124°58.66' W. long.;
- (55) 47°32.17' N. lat., 124°57.77' W. long.;
- (56) 47°30.27' N. lat., 124°56.16' W. long.;
- (57) 47°30.60' N. lat., 124°54.80' W. long.;
- (58) 47°29.26' N. lat., 124°52.21' W. long.;
- (59) 47°28.21' N. lat., 124°50.65' W. long.;
- (60) 47°27.38' N. lat., 124°49.34' W. long.;
- (61) 47°25.61' N. lat., 124°48.26' W. long.;
- (62) 47°23.54' N. lat., 124°46.42' W. long.;
- (63) 47°20.64' N. lat., 124°45.91' W. long.;
- (64) 47°17.99' N. lat., 124°45.59' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (65) 47°18.20' N. lat., 124°49.12' W. long.;
- (66) 47°15.01' N. lat., 124°51.09' W. long.;
- (67) 47°12.61' N. lat., 124°54.89' W. long.;
- (68) 47°08.22' N. lat., 124°56.53' W. long.;
- (69) 47°08.50' N. lat., 124°57.74' W. long.;
- (70) 47°01.92' N. lat., 124°54.95' W. long.;
- (71) 47°01.08' N. lat., 124°59.22' W. long.;
- (72) 46°58.48' N. lat., 124°57.81' W. long.;
- (73) 46°56.79' N. lat., 124°56.03' W. long.;
- (74) 46°58.01' N. lat., 124°55.09' W. long.;
- (75) 46°55.07' N. lat., 124°54.14' W. long.;
- (76) 46°59.60' N. lat., 124°49.79' W. long.;
- (77) 46°58.72' N. lat., 124°48.78' W. long.;
- (78) 46°54.45' N. lat., 124°48.36' W. long.;
- (79) 46°53.99' N. lat., 124°49.95' W. long.;
- (80) 46°54.38' N. lat., 124°52.73' W. long.;
- (81) 46°52.38' N. lat., 124°52.02' W. long.;
- (82) 46°48.93' N. lat., 124°49.17' W. long.;
- (83) 46°41.50' N. lat., 124°43.00' W. long.;
- (84) 46°34.50' N. lat., 124°28.50' W. long.;
- (85) 46°29.00' N. lat., 124°30.00' W. long.;
- (86) 46°20.00' N. lat., 124°36.50' W. long.;
- (87) 46°18.40' N. lat., 124°37.70' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (88) 46°18.03' N. lat., 124°35.46' W. long.;
- (89) 46°17.00' N. lat., 124°22.50' W. long.;
- (90) 46°16.00' N. lat., 124°20.62' W. long.;
- (91) 46°13.52' N. lat., 124°25.49' W. long.;
- (92) 46°12.17' N. lat., 124°30.74' W. long.;
- (93) 46°10.63' N. lat., 124°37.96' W. long.;
- (94) 46°09.29' N. lat., 124°39.01' W. long.;
- (95) 46°02.40' N. lat., 124°40.37' W. long.;
- (96) 45°56.45' N. lat., 124°38.00' W. long.;
- (97) 45°51.92' N. lat., 124°38.50' W. long.;
- (98) 45°47.20' N. lat., 124°35.58' W. long.;
- (99) 45°46.40' N. lat., 124°32.36' W. long.;
- (100) 45°46.00' N. lat., 124°32.10' W. long.;
- (101) 45°41.75' N. lat., 124°28.12' W. long.;
- (102) 45°36.95' N. lat., 124°24.47' W. long.;
- (103) 45°31.84' N. lat., 124°22.04' W. long.;
- (104) 45°27.10' N. lat., 124°21.74' W. long.;
- (105) 45°20.25' N. lat., 124°18.54' W. long.;
- (106) 45°18.14' N. lat., 124°17.59' W. long.;
- (107) 45°11.08' N. lat., 124°16.97' W. long.;
- (108) 45°04.39' N. lat., 124°18.35' W. long.;
- (109) 45°03.83' N. lat., 124°18.60' W. long.;
- (110) 44°58.05' N. lat., 124°21.58' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (111) 44°47.67' N. lat., 124°31.41' W. long.;
- (112) 44°44.54' N. lat., 124°33.58' W. long.;
- (113) 44°39.88' N. lat., 124°35.00' W. long.;
- (114) 44°32.90' N. lat., 124°36.81' W. long.;
- (115) 44°30.34' N. lat., 124°38.56' W. long.;
- (116) 44°30.04' N. lat., 124°42.31' W. long.;
- (117) 44°26.84' N. lat., 124°44.91' W. long.;
- (118) 44°17.99' N. lat., 124°51.04' W. long.;
- (119) 44°12.92' N. lat., 124°56.28' W. long.;
- (120) 44°02.34' N. lat., 124°55.46' W. long.;
- (121) 43°59.18' N. lat., 124°56.94' W. long.;
- (122) 43°56.74' N. lat., 124°56.74' W. long.;
- (123) 43°56.07' N. lat., 124°55.41' W. long.;
- (124) 43°55.41' N. lat., 124°52.21' W. long.;
- (125) 43°54.62' N. lat., 124°48.23' W. long.;
- (126) 43°55.90' N. lat., 124°41.11' W. long.;
- (127) 43°57.36' N. lat., 124°38.68' W. long.;
- (128) 43°56.47' N. lat., 124°34.61' W. long.;
- (129) 43°42.73' N. lat., 124°32.41' W. long.;
- (130) 43°30.92' N. lat., 124°34.43' W. long.;
- (131) 43°20.83' N. lat., 124°39.39' W. long.;
- (132) 43°17.45' N. lat., 124°41.16' W. long.;
- (133) 43°07.04' N. lat., 124°41.25' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (134) 43°03.45' N. lat., 124°44.36' W. long.;
- (135) 43°03.91' N. lat., 124°50.81' W. long.;
- (136) 42°55.70' N. lat., 124°52.79' W. long.;
- (137) 42°54.12' N. lat., 124°47.36' W. long.;
- (138) 42°50.00' N. lat., 124°45.33' W. long.;
- (139) 42°44.00' N. lat., 124°42.38' W. long.;
- (140) 42°40.50' N. lat., 124°41.71' W. long.;
- (141) 42°38.23' N. lat., 124°41.25' W. long.;
- (142) 42°33.02' N. lat., 124°42.38' W. long.;
- (143) 42°31.90' N. lat., 124°42.04' W. long.;
- (144) 42°30.08' N. lat., 124°42.67' W. long.;
- (145) 42°28.28' N. lat., 124°47.08' W. long.;
- (146) 42°25.22' N. lat., 124°43.51' W. long.;
- (147) 42°19.23' N. lat., 124°37.91' W. long.;
- (148) 42°16.29' N. lat., 124°36.11' W. long.;
- (149) 42°13.67' N. lat., 124°35.81' W. long.;
- (150) 42°05.66' N. lat., 124°34.92' W. long.;
- (151) 42°00.00' N. lat., 124°35.27' W. long.;
- (152) 41°47.04' N. lat., 124°27.64' W. long.;
- (153) 41°32.92' N. lat., 124°28.79' W. long.;
- (154) 41°24.17' N. lat., 124°28.46' W. long.;
- (155) 41°10.12' N. lat., 124°20.50' W. long.;
- (156) 40°51.41' N. lat., 124°24.38' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (157) 40°43.71' N. lat., 124°29.89' W. long.;
- (158) 40°40.14' N. lat., 124°30.90' W. long.;
- (159) 40°39.44' N lat., 124°29.08' W long.;
- (160) 40°37.08' N lat., 124°28.29' W long.;
- (161) 40°34.76' N lat., 124°29.82' W long.;
- (162) 40°36.78' N lat., 124°37.06' W long.;
- (163) 40°32.44' N lat., 124°39.58' W long.;
- (164) 40°30.37' N lat., 124°37.30' W long.;
- (165) 40°28.48' N lat., 124°36.95' W long.;
- (166) 40°24.82' N lat., 124°35.12' W long.;
- (167) 40°23.30' N lat., 124°31.60' W long.;
- (168) 40°23.52' N lat., 124°28.78' W long.;
- (169) 40°22.43' N lat., 124°25.00' W long.;
- (170) 40°21.72' N lat., 124°24.94' W long.;
- (171) 40°21.87' N lat., 124°27.96' W long.;
- (172) 40°21.40' N lat., 124°28.74' W long.;
- (173) 40°19.68' N lat., 124°28.49' W long.;
- (174) 40°17.73' N lat., 124°25.43' W long.;
- (175) 40°18.37' N lat., 124°23.35' W long.;
- (176) 40°15.75' N lat., 124°26.05' W long.;
- (177) 40°16.75' N lat., 124°33.71' W long.;
- (178) 40°16.29' N lat., 124°34.36' W long.;
- (179) 40°10.13' N lat., 124°21.92' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (180) 40°07.70' N lat., 124°18.44' W long.;
- (181) 40°08.84' N lat., 124°15.86' W long.;
- (182) 40°06.39' N lat., 124°17.26' W long.;
- (183) 40°03.15' N lat., 124°14.43' W long.;
- (184) 40°02.19' N lat., 124°12.85' W long.;
- (185) 40°02.89' N lat., 124°11.78' W long.;
- (186) 40°02.78' N lat., 124°10.70' W long.;
- (187) 40°04.57' N lat., 124°10.08' W long.;
- (188) 40°06.06' N lat., 124°08.30' W long.;
- (189) 40°04.05' N lat., 124°08.93' W long.;
- (190) 40°01.17' N lat., 124°08.80' W long.;
- (191) 40°01.00' N lat., 124°09.96' W long.;
- (192) 39°58.07' N lat., 124°11.81' W long.;
- (193) 39°56.39' N lat., 124°08.69' W long.;
- (194) 39°54.64' N lat., 124°07.30' W long.;
- (195) 39°53.86' N lat., 124°07.95' W long.;
- (196) 39°51.95' N lat., 124°07.63' W long.;
- (197) 39°48.78' N lat., 124°03.29' W long.;
- (198) 39°47.36' N lat., 124°03.31' W long.;
- (199) 39°40.08' N lat., 123°58.37' W long.;
- (200) 39°36.16' N lat., 123°56.90' W long.;
- (201) 39°30.75' N lat., 123°55.86' W long.;
- (202) 39°31.62' N lat., 123°57.33' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (203) 39°30.91' N lat., 123°57.88' W long.;
- (204) 39°01.79' N lat., 123°56.59' W long.;
- (205) 38°59.42' N lat., 123°55.67' W long.;
- (206) 38°58.89' N lat., 123°56.28' W long.;
- (207) 38°57.50' N lat., 123°56.28' W long.;
- (208) 38°54.72' N lat., 123°55.68' W long.;
- (209) 38°48.95' N lat., 123°51.85' W long.;
- (210) 38°36.67' N lat., 123°40.20' W long.;
- (211) 38°33.82' N lat., 123°39.23' W long.;
- (212) 38°29.02' N lat., 123°33.52' W long.;
- (213) 38°18.88' N lat., 123°25.93' W long.;
- (214) 38°14.12' N lat., 123°23.26' W long.;
- (215) 38°11.07' N lat., 123°22.07' W long.;
- (216) 38°03.18' N lat., 123°20.77' W long.;
- (217) 38°00.00' N lat., 123°23.08' W long.;
- (218) 37°55.07' N lat., 123°26.81' W long.;
- (219) 37°50.66' N lat., 123°23.06' W long.;
- (220) 37°45.18' N lat., 123°11.88' W long.;
- (221) 37°35.67' N lat., 123°01.20' W long.;
- (222) 37°26.81' N lat., 122°55.57' W long.;
- (223) 37°26.78' N lat., 122°53.91' W long.;
- (224) 37°25.74' N lat., 122°54.13' W long.;
- (225) 37°25.33' N lat., 122°53.59' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (226) 37°25.29' N lat., 122°52.57' W long.;
- (227) 37°24.50' N lat., 122°52.09' W long.;
- (228) 37°23.25' N lat., 122°53.12' W long.;
- (229) 37°15.58' N lat., 122°48.36' W long.;
- (230) 37°11.00' N lat., 122°44.50' W long.;
- (231) 37°07.00' N lat., 122°41.25' W long.;
- (232) 37°03.18' N lat., 122°38.15' W long.;
- (233) 37°00.48' N lat., 122°33.93' W long.;
- (234) 36°58.70' N lat., 122°27.22' W long.;
- (235) 37°00.85' N lat., 122°24.70' W long.;
- (236) 36°58.00' N lat., 122°24.14' W long.;
- (237) 36°58.74' N lat., 122°21.51' W long.;
- (238) 36°56.97' N lat., 122°21.32' W long.;
- (239) 36°51.52' N lat., 122°10.68' W long.;
- (240) 36°48.39' N lat., 122°07.60' W long.;
- (241) 36°47.43' N lat., 122°03.22' W long.;
- (242) 36°50.95' N lat., 121°58.03' W long.;
- (243) 36°49.92' N lat., 121°58.01' W long.;
- (244) 36°48.86' N lat., 121°58.80' W long.;
- (245) 36°47.76' N lat., 121°58.68' W long.;
- (246) 36°48.39' N lat., 121°51.10' W long.;
- (247) 36°45.74' N lat., 121°54.17' W long.;
- (248) 36°45.51' N lat., 121°57.72' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (249) 36°38.84' N lat., 122°01.32' W long.;
- (250) 36°35.62' N lat., 122°00.98' W long.;
- (251) 36°32.46' N lat., 121°59.15' W long.;
- (252) 36°32.79' N lat., 121°57.67' W long.;
- (253) 36°31.98' N lat., 121°56.55' W long.;
- (254) 36°31.79' N lat., 121°58.40' W long.;
- (255) 36°30.73' N lat., 121°59.70' W long.;
- (256) 36°30.31' N lat., 122°00.22' W long.;
- (257) 36°29.35' N lat., 122°00.28' W long.;
- (258) 36°27.66' N lat., 121°59.80' W long.;
- (259) 36°26.22' N lat., 121°58.35' W long.;
- (260) 36°21.20' N lat., 122°00.72' W long.;
- (261) 36°20.47' N lat., 122°02.92' W long.;
- (262) 36°18.46' N lat., 122°04.51' W long.;
- (263) 36°15.92' N lat., 122°01.33' W long.;
- (264) 36°13.81' N lat., 121°57.40' W long.;
- (265) 36°14.43' N lat., 121°55.43' W long.;
- (266) 36°10.24' N lat., 121°43.08' W long.;
- (267) 36°07.66' N lat., 121°40.91' W long.;
- (268) 36°02.49' N lat., 121°36.51' W long.;
- (269) 36°01.08' N lat., 121°36.63' W long.;
- (270) 36°00.00' N lat., 121°35.41' W long.;
- (271) 35°57.84' N lat., 121°32.81' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (272) 35°50.36' N lat., 121°29.32' W long.;
- (273) 35°39.03' N lat., 121°22.86' W long.;
- (274) 35°24.27' N lat., 121°02.74' W long.;
- (275) 35°16.53' N lat., 121°00.39' W long.;
- (276) 35°04.82' N lat., 120°53.96' W long.;
- (277) 34°52.51' N lat., 120°51.62' W long.;
- (278) 34°43.36' N lat., 120°52.12' W long.;
- (279) 34°38.06' N lat., 120°49.65' W long.;
- (280) 34°30.85' N lat., 120°44.76' W long.;
- (281) 34°27.00' N lat., 120°39.00' W long.;
- (282) 34°21.90' N lat., 120°25.25' W long.;
- (283) 34°24.86' N lat., 120°16.81' W long.;
- (284) 34°22.80' N lat., 119°57.06' W long.;
- (285) 34°18.59' N lat., 119°44.84' W long.;
- (286) 34°15.04' N lat., 119°40.34' W long.;
- (287) 34°14.40' N lat., 119°45.39' W long.;
- (288) 34°12.32' N lat., 119°42.41' W long.;
- (289) 34°09.71' N lat., 119°28.85' W long.;
- (290) 34°04.70' N lat., 119°15.38' W long.;
- (291) 34°03.33' N lat., 119°12.93' W long.;
- (292) 34°02.72' N lat., 119°07.01' W long.;
- (293) 34°03.90' N lat., 119°04.64' W long.;
- (294) 34°02.75' N lat., 119°02.88' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (295) 33°59.44' N lat., 119°03.43' W long.;
- (296) 33°59.12' N lat., 118°59.59' W long.;
- (297) 33°59.84' N lat., 118°57.29' W long.;
- (298) 33°58.83' N lat., 118°46.69' W long.;
- (299) 33°58.73' N lat., 118°41.76' W long.;
- (300) 33°55.09' N lat., 118°34.11' W long.;
- (301) 33°54.09' N lat., 118°38.42' W long.;
- (302) 33°51.00' N lat., 118°36.66' W long.;
- (303) 33°49.06' N lat., 118°31.86' W long.;
- (304) 33°49.69' N lat., 118°26.49' W long.;
- (305) 33°49.35' N lat., 118°26.04' W long.;
- (306) 33°47.60' N lat., 118°31.13' W long.;
- (307) 33°39.82' N lat., 118°18.31' W long.;
- (308) 33°35.68' N lat., 118°16.81' W long.;
- (309) 33°32.85' N lat., 118°09.41' W long.;
- (310) 33°35.14' N lat., 118°04.95' W long.;
- (311) 33°33.56' N lat., 118°00.63' W long.;
- (312) 33°34.25' N lat., 117°53.44' W long.;
- (313) 33°31.65' N lat., 117°49.21' W long.;
- (314) 33°16.07' N lat., 117°34.74' W long.;
- (315) 33°07.06' N lat., 117°22.71' W long.;
- (316) 33°02.81' N lat., 117°21.17' W long.;
- (317) 33°01.76' N lat., 117°20.51' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (318) 32°59.90' N lat., 117°19.38' W long.;
- (319) 32°57.29' N lat., 117°18.94' W long.;
- (320) 32°56.15' N lat., 117°19.54' W long.;
- (321) 32°55.30' N lat., 117°19.38' W long.;
- (322) 32°54.27' N lat., 117°17.17' W long.;
- (323) 32°52.94' N lat., 117°17.11' W long.;
- (324) 32°52.66' N lat., 117°19.67' W long.;
- (325) 32°50.95' N lat., 117°21.17' W long.;
- (326) 32°47.11' N lat., 117°22.98' W long.;
- (327) 32°45.60' N lat., 117°22.64' W long.;
- (328) 32°42.79' N lat., 117°21.16' W long.; and
- (329) 32°34.22' N lat., 117°21.20' W long.

(b) The 100 fm (183 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°04.80' N lat., 118°37.90' W long.;
- (2) 33°02.65' N lat., 118°34.08' W long.;
- (3) 32°55.80' N lat., 118°28.92' W long.;
- (4) 32°55.04' N lat., 118°27.68' W long.;
- (5) 32°49.79' N lat., 118°20.87' W long.;
- (6) 32°48.05' N lat., 118°19.62' W long.;
- (7) 32°47.41' N lat., 118°21.86' W long.;
- (8) 32°44.03' N lat., 118°24.70' W long.;
- (9) 32°47.81' N lat., 118°30.20' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (10) 32°49.79' N lat., 118°32.00' W long.;
- (11) 32°53.36' N lat., 118°33.23' W long.;
- (12) 32°55.13' N lat., 118°35.31' W long.;
- (13) 33°00.22' N lat., 118°38.68' W long.;
- (14) 33°03.13' N lat., 118°39.59' W long.; and
- (15) 33°04.80' N lat., 118°37.90' W long.

(c) The 100 fm (183 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.23' N. lat., 118°39.38' W. long.;
- (2) 33°29.60' N. lat., 118°36.11' W. long.;
- (3) 33°29.14' N. lat., 118°30.81' W. long.;
- (4) 33°26.97' N. lat., 118°27.57' W. long.;
- (5) 33°25.68' N. lat., 118°23.00' W. long.;
- (6) 33°22.67' N. lat., 118°18.41' W. long.;
- (7) 33°19.72' N. lat., 118°16.25' W. long.;
- (8) 33°17.14' N. lat., 118°14.96' W. long.;
- (9) 33°16.09' N. lat., 118°15.46' W. long.;
- (10) 33°18.14' N lat., 118°27.94' W long.;
- (11) 33°19.84' N lat., 118°32.22' W long.;
- (12) 33°20.81' N lat., 118°32.91' W long.;
- (13) 33°21.94' N lat., 118°32.03' W long.;
- (14) 33°23.14' N lat., 118°30.12' W long.;
- (15) 33°24.87' N. lat., 118°32.45' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(16) 33°25.30' N. lat., 118°34.32' W. long.; and

(17) 33°28.23' N. lat., 118°39.38' W. long.

(d) The 100 fm (183 m) depth contour around the northern Channel Islands off the state of California is defined by straight lines connecting all of the following points in the order stated:

(1) 34°12.89' N lat., 120°29.31' W long.;

(2) 34°10.96' N lat., 120°25.19' W long.;

(3) 34°08.74' N lat., 120°18.00' W long.;

(4) 34°07.02' N lat., 120°10.45' W long.;

(5) 34°06.75' N lat., 120°05.09' W long.;

(6) 34°08.15' N lat., 119°54.96' W long.;

(7) 34°07.17' N lat., 119°48.54' W long.;

(8) 34°05.66' N lat., 119°37.58' W long.;

(9) 34°04.76' N lat., 119°26.28' W long.;

(10) 34°02.97' N lat., 119°16.89' W long.;

(11) 34°00.97' N lat., 119°18.78' W long.;

(12) 33°59.38' N lat., 119°21.71' W long.;

(13) 33°58.62' N lat., 119°32.05' W long.;

(14) 33°57.69' N lat., 119°33.38' W long.;

(15) 33°57.40' N lat., 119°35.84' W long.;

(16) 33°56.07' N lat., 119°41.10' W long.

(17) 33°55.54' N lat., 119°47.99' W long.;

(18) 33°56.60' N lat., 119°51.40' W long.;

(19) 33°55.56' N lat., 119°53.87' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (20) 33°54.40' N lat., 119°53.74' W long.;
- (21) 33°52.72' N lat., 119°54.62' W long.;
- (22) 33°47.95' N lat., 119°53.50' W long.;
- (23) 33°45.75' N lat., 119°51.04' W long.;
- (24) 33°40.18' N lat., 119°50.36' W long.;
- (25) 33°38.19' N lat., 119°57.85' W long.;
- (26) 33°44.92' N lat., 120°02.95' W long.;
- (27) 33°48.90' N lat., 120°05.34' W long.;
- (28) 33°51.64' N lat., 120°08.11' W long.;
- (29) 33°58.31' N lat., 120°27.99' W long.;
- (30) 34°03.23' N lat., 120°34.34' W long.;
- (31) 34°09.42' N lat., 120°37.64' W long.; and
- (32) 34°12.89' N lat., 120°29.31' W long.

(e) The 100 fm (183 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°33.85' N lat., 119°4.87' W long.;
- (2) 33°33.27' N lat., 119°5.67' W long.;
- (3) 33°31.9' N lat., 119°5.08' W long.;
- (4) 33°28.62' N lat., 119°7.28' W long.;
- (5) 33°27.04' N lat., 119°5.84' W long.;
- (6) 33°26.2' N lat., 119°3.24' W long.;
- (7) 33°27.07' N lat., 118°59.96' W long.;
- (8) 33°28.7' N lat., 118°58.76' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(9) 33°31' N lat., 119°1.02' W long.;

(10) 33°31.99' N lat., 119°2.86' W long.; and

(11) 33°33.85' N lat., 119°4.87' W long.

(f) The 100 fm (183 m) depth contour around Tanner Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

(1) 32°45.92' N lat., 119°14.6' W long.;

(2) 32°44.34' N lat., 119°16.43' W long.;

(3) 32°36.75' N lat., 119°4.51' W long.;

(4) 32°41.41' N lat., 119°2.93' W long.;

(5) 32° 45.85' N lat., 119°10.62' W long.; and

(6) 32° 45.92' N lat., 119°14.6' W long.

(g) The 100 fm (183 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

(1) 33°31.37' N lat., 119°44.84' W long.;

(2) 33°28.82' N lat., 119°52.19' W long.;

(3) 33°25.43' N lat., 119°51.27' W long.;

(4) 33°18.01' N lat., 119°47.18' W long.;

(5) 33°15.8' N lat., 119°43.64' W long.;

(6) 33°14.22' N lat., 119°37' W long.;

(7) 33°11.56' N lat., 119°29.58' W long.;

(8) 33°11.28' N lat., 119°26.54' W long.;

(9) 33°12.94' N lat., 119°15.86' W long.;

(10) 33°14.48' N lat., 119°16.97' W long.;

(11) 33°17.33' N lat., 119°22.93' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(12) 33°21.28' lat., 119°27.66' W long.;

(13) 33°23.38' N lat., 119°33.29' W long.; and

(14) 33°31.37' N lat., 119°44.84' W long.

(h) The 100 fm (183 m) depth contour around Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

(1) 32°37.79' N lat., 119°19.68' W long.;

(2) 32°36.19' N lat., 119°21.84' W long.;

(3) 32°33.16' N lat., 119°21.76' W long.;

(4) 32°30.92' N lat., 119°20.46' W long.;

(5) 32°29.25' N lat., 119°15.93' W long.;

(6) 32°29.44' N lat., 119°15.44' W long.;

(7) 32°29.23' N lat., 119°15.23' W long.;

(8) 32°27.48' N lat., 119°15.56' W long.;

(9) 32°23.19' N lat., 119°3.23' W long.;

(10) 32°22.94' N lat., 118°57.58' W long.;

(11) 32°24.47' N lat., 118°57.61' W long.;

(12) 32°27.3' N lat., 119°1.06' W long.; and

(13) 32°37.79' N lat., 119°19.68' W long.

(i) The 125–fm (229–m) depth contour used between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

(1) 48°15.00' N. lat., 125°41.13' W. long.;

(2) 48°13.05' N. lat., 125°37.43' W. long.;

(3) 48°08.62' N. lat., 125°41.68' W. long.;

(4) 48°07.42' N. lat., 125°42.38' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (5) 48°04.20' N. lat., 125°36.57' W. long.;
- (6) 48°02.79' N. lat., 125°35.55' W. long.;
- (7) 48°00.48' N. lat., 125°37.84' W. long.;
- (8) 47°54.90' N. lat., 125°34.79' W. long.;
- (9) 47°58.37' N. lat., 125°26.58' W. long.;
- (10) 47°59.84' N. lat., 125°25.20' W. long.;
- (11) 48°01.85' N. lat., 125°24.12' W. long.;
- (12) 48°02.13' N. lat., 125°22.80' W. long.;
- (13) 48°03.31' N. lat., 125°22.46' W. long.;
- (14) 48°06.83' N. lat., 125°17.73' W. long.;
- (15) 48°10.08' N. lat., 125°15.56' W. long.;
- (16) 48°11.24' N. lat., 125°13.72' W. long.;
- (17) 48°12.41' N. lat., 125°14.48' W. long.;
- (18) 48°13.01' N. lat., 125°13.77' W. long.;
- (19) 48°13.59' N. lat., 125°12.83' W. long.;
- (20) 48°12.22' N. lat., 125°12.28' W. long.;
- (21) 48°11.15' N. lat., 125°12.26' W. long.;
- (22) 48°10.18' N. lat., 125°10.44' W. long.;
- (23) 48°10.18' N. lat., 125°06.32' W. long.;
- (24) 48°15.39' N. lat., 125°02.83' W. long.;
- (25) 48°18.32' N. lat., 125°01.00' W. long.;
- (26) 48°21.67' N. lat., 125°01.86' W. long.;
- (27) 48°25.70' N. lat., 125°00.10' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (28) 48°26.43' N. lat., 124°56.65' W. long.;
- (29) 48°24.28' N. lat., 124°56.48' W. long.;
- (30) 48°23.27' N. lat., 124°59.12' W. long.;
- (31) 48°21.79' N. lat., 124°59.30' W. long.;
- (32) 48°20.71' N. lat., 124°58.74' W. long.;
- (33) 48°19.84' N. lat., 124°57.09' W. long.;
- (34) 48°22.06' N. lat., 124°54.78' W. long.;
- (35) 48°22.45' N. lat., 124°53.35' W. long.;
- (36) 48°22.74' N. lat., 124°50.96' W. long.;
- (37) 48°21.04' N. lat., 124°52.60' W. long.;
- (38) 48°18.07' N. lat., 124°55.85' W. long.;
- (39) 48°15.03' N. lat., 124°58.16' W. long.;
- (40) 48°11.31' N. lat., 124°58.53' W. long.;
- (41) 48°06.25' N. lat., 125°00.06' W. long.;
- (42) 48°04.70' N. lat., 125°01.80' W. long.;
- (43) 48°04.93' N. lat., 125°03.92' W. long.;
- (44) 48°06.44' N. lat., 125°06.50' W. long.;
- (45) 48°07.34' N. lat., 125°09.35' W. long.;
- (46) 48°07.62' N. lat., 125°11.37' W. long.;
- (47) 48°03.71' N. lat., 125°17.63' W. long.;
- (48) 48°01.35' N. lat., 125°18.66' W. long.;
- (49) 48°00.05' N. lat., 125°19.66' W. long.;
- (50) 47°59.51' N. lat., 125°18.90' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (51) 47°58.29' N. lat., 125°16.64' W. long.;
- (52) 47°54.67' N. lat., 125°13.20' W. long.;
- (53) 47°53.15' N. lat., 125°12.53' W. long.;
- (54) 47°48.46' N. lat., 125°04.72' W. long.;
- (55) 47°46.10' N. lat., 125°04.00' W. long.;
- (56) 47°44.60' N. lat., 125°04.49' W. long.;
- (57) 47°42.90' N. lat., 125°04.72' W. long.;
- (58) 47°40.71' N. lat., 125°04.68' W. long.;
- (59) 47°39.02' N. lat., 125°05.63' W. long.;
- (60) 47°34.86' N. lat., 125°02.11' W. long.;
- (61) 47°31.64' N. lat., 124°58.11' W. long.;
- (62) 47°29.69' N. lat., 124°55.71' W. long.;
- (63) 47°29.35' N. lat., 124°53.23' W. long.;
- (64) 47°28.56' N. lat., 124°51.34' W. long.;
- (65) 47°25.31' N. lat., 124°48.20' W. long.;
- (66) 47°23.92' N. lat., 124°47.15' W. long.;
- (67) 47°18.09' N. lat., 124°45.74' W. long.;
- (68) 47°18.65' N. lat., 124°51.51' W. long.;
- (69) 47°18.12' N. lat., 124°52.58' W. long.;
- (70) 47°17.64' N. lat., 124°50.45' W. long.;
- (71) 47°16.31' N. lat., 124°50.92' W. long.;
- (72) 47°15.60' N. lat., 124°52.62' W. long.;
- (73) 47°14.25' N. lat., 124°52.49' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (74) 47°11.32' N. lat., 124°57.19' W. long.;
- (75) 47°09.14' N. lat., 124°57.46' W. long.;
- (76) 47°08.83' N. lat., 124°58.47' W. long.;
- (77) 47°05.88' N. lat., 124°58.26' W. long.;
- (78) 47°03.60' N. lat., 124°55.84' W. long.;
- (79) 47°02.91' N. lat., 124°56.15' W. long.;
- (80) 47°01.08' N. lat., 124°59.46' W. long.;
- (81) 46°58.13' N. lat., 124°58.83' W. long.;
- (82) 46°57.44' N. lat., 124°57.78' W. long.;
- (83) 46°55.98' N. lat., 124°54.60' W. long.;
- (84) 46°54.90' N. lat., 124°54.14' W. long.;
- (85) 46°58.47' N. lat., 124°49.65' W. long.;
- (86) 46°54.44' N. lat., 124°48.79' W. long.;
- (87) 46°54.41' N. lat., 124°52.87' W. long.;
- (88) 46°49.36' N. lat., 124°52.77' W. long.;
- (89) 46°40.06' N. lat., 124°45.34' W. long.;
- (90) 46°39.64' N. lat., 124°42.21' W. long.;
- (91) 46°34.27' N. lat., 124°34.63' W. long.;
- (92) 46°33.58' N. lat., 124°29.10' W. long.;
- (93) 46°25.64' N. lat., 124°32.57' W. long.;
- (94) 46°21.33' N. lat., 124°36.36' W. long.;
- (95) 46°20.59' N. lat., 124°36.15' W. long.;
- (96) 46°19.38' N. lat., 124°38.21' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (97) 46°17.94' N. lat., 124°38.10' W. long.;
- (98) 46°16.00' N. lat., 124°22.17' W. long.;
- (99) 46°13.37' N. lat., 124°30.70' W. long.;
- (100) 46°12.20' N. lat., 124°36.04' W. long.;
- (101) 46°11.01' N. lat., 124°38.68' W. long.;
- (102) 46°09.73' N. lat., 124°39.91' W. long.;
- (103) 46°03.23' N. lat., 124°42.03' W. long.;
- (104) 46°01.16' N. lat., 124°42.06' W. long.;
- (105) 46°00.35' N. lat., 124°42.26' W. long.;
- (106) 45°52.81' N. lat., 124°41.62' W. long.;
- (107) 45°49.70' N. lat., 124°41.14' W. long.;
- (108) 45°46.00' N. lat., 124°38.92' W. long.;
- (109) 45°45.18' N. lat., 124°38.39' W. long.;
- (110) 45°43.24' N. lat., 124°37.77' W. long.;
- (111) 45°34.75' N. lat., 124°28.58' W. long.;
- (112) 45°19.90' N. lat., 124°21.34' W. long.;
- (113) 45°12.44' N. lat., 124°19.34' W. long.;
- (114) 45°07.48' N. lat., 124°19.73' W. long.;
- (115) 45°03.83' N. lat., 124°21.20' W. long.;
- (116) 44°59.96' N. lat., 124°22.91' W. long.;
- (117) 44°54.73' N. lat., 124°26.84' W. long.;
- (118) 44°51.16' N. lat., 124°31.41' W. long.;
- (119) 44°49.97' N. lat., 124°32.37' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (120) 44°47.06' N. lat., 124°34.43' W. long.;
- (121) 44°41.38' N. lat., 124°36.52' W. long.;
- (122) 44°31.80' N. lat., 124°38.11' W. long.;
- (123) 44°30.35' N. lat., 124°43.03' W. long.;
- (124) 44°27.95' N. lat., 124°45.13' W. long.;
- (125) 44°24.73' N. lat., 124°47.42' W. long.;
- (126) 44°19.67' N. lat., 124°51.17' W. long.;
- (127) 44°17.96' N. lat., 124°52.52' W. long.;
- (128) 44°13.70' N. lat., 124°56.45' W. long.;
- (129) 44°12.26' N. lat., 124°57.53' W. long.;
- (130) 44°08.30' N. lat., 124°57.17' W. long.;
- (131) 44°07.57' N. lat., 124°57.19' W. long.;
- (132) 44°04.78' N. lat., 124°56.31' W. long.;
- (133) 44°01.14' N. lat., 124°56.07' W. long.;
- (134) 43°59.43' N. lat., 124°57.22' W. long.;
- (135) 43°57.49' N. lat., 124°57.31' W. long.;
- (136) 43°55.73' N. lat., 124°55.41' W. long.;
- (137) 43°54.74' N. lat., 124°53.15' W. long.;
- (138) 43°54.58' N. lat., 124°52.18' W. long.;
- (139) 43°53.18' N. lat., 124°47.41' W. long.;
- (140) 43°53.60' N. lat., 124°37.45' W. long.;
- (141) 43°53.05' N. lat., 124°36.00' W. long.;
- (142) 43°47.93' N. lat., 124°35.18' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (143) 43°39.32' N. lat., 124°35.14' W. long.;
- (144) 43°32.38' N. lat., 124°35.26' W. long.;
- (145) 43°30.19' N. lat., 124°35.89' W. long.;
- (146) 43°27.80' N. lat., 124°36.42' W. long.;
- (147) 43°23.73' N. lat., 124°39.66' W. long.;
- (148) 43°20.83' N. lat., 124°41.18' W. long.;
- (149) 43°10.48' N. lat., 124°43.54' W. long.;
- (150) 43°04.77' N. lat., 124°45.51' W. long.;
- (151) 43°05.94' N. lat., 124°49.77' W. long.;
- (152) 43°03.38' N. lat., 124°51.86' W. long.;
- (153) 43°00.39' N. lat., 124°51.77' W. long.;
- (154) 42°56.80' N. lat., 124°53.38' W. long.;
- (155) 42°54.53' N. lat., 124°52.72' W. long.;
- (156) 42°52.89' N. lat., 124°47.45' W. long.;
- (157) 42°50.00' N. lat., 124°47.03' W. long.;
- (158) 42°48.10' N. lat., 124°46.75' W. long.;
- (159) 42°46.34' N. lat., 124°43.54' W. long.;
- (160) 42°41.66' N. lat., 124°42.70' W. long.;
- (161) 42°39.97' N. lat., 124°42.45' W. long.;
- (162) 42°32.53' N. lat., 124°42.77' W. long.;
- (163) 42°30.37' N. lat., 124°42.97' W. long.;
- (164) 42°28.07' N. lat., 124°47.65' W. long.;
- (165) 42°21.58' N. lat., 124°41.41' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (166) 42°15.17' N. lat., 124°36.25' W. long.;
- (167) 42°13.67' N. lat., 124°36.20' W. long.;
- (168) 42°8.29' N. lat., 124°36.08' W. long.;
- (169) 42°00.00' N. lat., 124°35.46' W. long.;
- (170) 41°47.67' N. lat., 124°28.67' W. long.;
- (171) 41°32.91' N. lat., 124°29.01' W. long.;
- (172) 41°22.57' N. lat., 124°28.66' W. long.;
- (173) 41°13.38' N. lat., 124°22.88' W. long.;
- (174) 41°06.42' N. lat., 124°22.02' W. long.;
- (175) 40°50.19' N. lat., 124°25.58' W. long.;
- (176) 40°44.08' N. lat., 124°30.43' W. long.;
- (177) 40°40.54' N. lat., 124°31.75' W. long.;
- (178) 40°37.36' N. lat., 124°29.17' W. long.;
- (179) 40°35.30' N. lat., 124°30.03' W. long.;
- (180) 40°37.02' N. lat., 124°37.10' W. long.;
- (181) 40°35.82' N. lat., 124°39.58' W. long.;
- (182) 40°31.70' N. lat., 124°39.97' W. long.;
- (183) 40°30.35' N. lat., 124°37.52' W. long.;
- (184) 40°28.39' N. lat., 124°37.16' W. long.;
- (185) 40°24.77' N. lat., 124°35.39' W. long.;
- (186) 40°23.22' N. lat., 124°31.87' W. long.;
- (187) 40°23.40' N. lat., 124°28.65' W. long.;
- (188) 40°22.32' N. lat., 124°25.15' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (189) 40°21.85' N lat., 124°25.09' W long.;
- (190) 40°21.91' N. lat., 124°27.97' W. long.;
- (191) 40°21.37' N. lat., 124°29.03' W. long.;
- (192) 40°19.74' N. lat., 124°28.71' W. long.;
- (193) 40°18.52' N. lat., 124°27.26' W. long.;
- (194) 40°17.57' N. lat., 124°25.49' W. long.;
- (195) 40°18.20' N. lat., 124°23.63' W. long.;
- (196) 40°15.89' N. lat., 124°26.00' W. long.;
- (197) 40°17.00' N. lat., 124°35.01' W. long.;
- (198) 40°15.97' N. lat., 124°35.91' W. long.;
- (199) 40°10.00' N. lat., 124°22.00' W. long.;
- (200) 40°07.35' N. lat., 124°18.64' W. long.;
- (201) 40°08.46' N. lat., 124°16.24' W. long.;
- (202) 40°06.26' N. lat., 124°17.54' W. long.;
- (203) 40°03.26' N. lat., 124°15.30' W. long.;
- (204) 40°02.00' N. lat., 124°12.97' W. long.;
- (205) 40°02.67' N lat., 124°11.83' W long.;
- (206) 40°02.70' N lat., 124°10.57' W long.;
- (207) 40°04.08' N lat., 124°10.09' W long.;
- (208) 40°04.08' N lat., 124°09.10' W long.;
- (209) 40°01.23' N lat., 124°08.91' W long.;
- (210) 40°01.18' N lat., 124°09.92' W long.;
- (211) 39°58.05' N. lat., 124°11.87' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (212) 39°56.39' N lat., 124°08.70' W long.;
- (213) 39°54.64' N lat., 124°07.31' W long.;
- (214) 39°53.87' N lat., 124°07.95' W long.;
- (215) 39°52.42' N lat., 124°08.18' W long.;
- (216) 39°49.64' N lat., 124°06.05' W long.;
- (217) 39°49.30' N lat., 124°04.60' W long.;
- (218) 39°48.49' N lat., 124°03.86' W long.;
- (219) 39°47.73' N lat., 124°04.59' W long.;
- (220) 39°42.50' N lat., 124°00.60' W long.;
- (221) 39°34.23' N lat., 123°56.82' W long.;
- (222) 39°33.00' N lat., 123°56.44' W long.;
- (223) 39°30.96' N lat., 123°56.00' W long.;
- (224) 39°31.34' N lat., 123°56.71' W long.;
- (225) 39°32.03' N lat., 123°57.44' W long.;
- (226) 39°31.43' N lat., 123°58.16' W long.;
- (227) 39°05.56' N lat., 123°57.24' W long.;
- (228) 39°01.75' N lat., 123°56.83' W long.;
- (229) 38°59.52' N lat., 123°55.95' W long.;
- (230) 38°58.98' N lat., 123°56.57' W long.;
- (231) 38°57.50' N lat., 123°56.57' W long.;
- (232) 38°53.91' N lat., 123°56.00' W long.;
- (233) 38°42.57' N lat., 123°46.60' W long.;
- (234) 38°28.72' N lat., 123°35.61' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (235) 38°28.01' N lat., 123°36.47' W long.;
- (236) 38°20.94' N lat., 123°31.26' W long.;
- (237) 38°15.94' N lat., 123°25.33' W long.;
- (238) 38°10.95' N lat., 123°23.19' W long.;
- (239) 38°05.52' N lat., 123°22.90' W long.;
- (240) 38°08.46' N lat., 123°26.23' W long.;
- (241) 38°06.95' N lat., 123°28.03' W long.;
- (242) 38°06.25' N lat., 123°29.70' W long.;
- (243) 38°04.57' N lat., 123°31.37' W long.;
- (244) 38°02.32' N lat., 123°31.09' W long.;
- (245) 37°59.97' N lat., 123°28.43' W long.;
- (246) 37°58.10' N lat., 123°26.69' W long.;
- (247) 37°55.46' N lat., 123°27.05' W long.;
- (248) 37°51.51' N lat., 123°24.86' W long.;
- (249) 37°45.01' N lat., 123°12.09' W long.;
- (250) 37°35.67' N lat., 123°01.56' W long.;
- (251) 37°26.62' N lat., 122°56.21' W long.;
- (252) 37°14.41' N lat., 122°49.07' W long.;
- (253) 37°11.00' N lat., 122°45.87' W long.;
- (254) 37°07.00' N lat., 122°41.97' W long.;
- (255) 37°03.19' N lat., 122°38.31' W long.;
- (256) 37°00.99' N lat., 122°35.51' W long.;
- (257) 36°58.31' N lat., 122°27.56' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (258) 37°00.54' N lat., 122°24.74' W long.;
- (259) 36°57.81' N lat., 122°24.65' W long.;
- (260) 36°58.54' N lat., 122°21.67' W long.;
- (261) 36°56.52' N lat., 122°21.70' W long.;
- (262) 36°55.37' N lat., 122°18.45' W long.;
- (263) 36°52.16' N lat., 122°12.17' W long.;
- (264) 36°51.44' N lat., 122°10.79' W long.;
- (265) 36°48.05' N lat., 122°07.59' W long.;
- (266) 36°47.35' N lat., 122°03.27' W long.;
- (267) 36°50.71' N lat., 121°58.17' W long.;
- (268) 36°48.89' N lat., 121°58.90' W long.;
- (269) 36°47.70' N lat., 121°58.76' W long.;
- (270) 36°48.37' N lat., 121°51.15' W long.;
- (271) 36°45.74' N lat., 121°54.18' W long.;
- (272) 36°45.52' N lat., 121°57.74' W long.;
- (273) 36°44.02' N lat., 121°58.55' W long.;
- (274) 36°38.84' N lat., 122°01.44' W long.;
- (275) 36°35.62' N lat., 122°01.06' W long.;
- (276) 36°32.41' N lat., 121°59.18' W long.;
- (277) 36°32.52' N lat., 121°57.62' W long.;
- (278) 36°30.16' N lat., 122°00.55' W long.;
- (279) 36°24.56' N lat., 121°59.19' W long.;
- (280) 36°22.19' N lat., 122°00.30' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (281) 36°20.62' N lat., 122°02.93' W long.;
- (282) 36°18.89' N lat., 122°05.18' W long.;
- (283) 36°14.45' N lat., 121°59.44' W long.;
- (284) 36°13.66' N lat., 121°57.17' W long.;
- (285) 36°14.35' N lat., 121°55.38' W long.;
- (286) 36°10.18' N lat., 121°43.26' W long.;
- (287) 36°07.67' N lat., 121°40.92' W long.;
- (288) 36°02.51' N lat., 121°36.76' W long.;
- (289) 36°01.04' N lat., 121°36.68' W long.;
- (290) 35°59.96' N lat., 121°35.39' W long.;
- (291) 35°57.84' N lat., 121°33.10' W long.;
- (292) 35°45.57' N lat., 121°27.26' W long.;
- (293) 35°39.02' N lat., 121°22.86' W long.;
- (294) 35°25.92' N lat., 121°05.52' W long.;
- (295) 35°16.26' N lat., 121°01.50' W long.;
- (296) 35°07.60' N lat., 120°56.49' W long.;
- (297) 34°57.77' N lat., 120°53.87' W long.;
- (298) 34°42.30' N lat., 120°53.42' W long.;
- (299) 34°37.69' N lat., 120°50.04' W long.;
- (300) 34°30.13' N lat., 120°44.45' W long.;
- (301) 34°27.00' N lat., 120°39.24' W long.;
- (302) 34°24.71' N lat., 120°35.37' W long.;
- (303) 34°21.63' N lat., 120°24.86' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (304) 34°24.39' N lat., 120°16.65' W long.;
- (305) 34°22.48' N lat., 119°56.42' W long.;
- (306) 34°18.54' N lat., 119°46.26' W long.;
- (307) 34°16.37' N lat., 119°45.12' W long.;
- (308) 34°15.91' N lat., 119°47.29' W long.;
- (309) 34°13.80' N lat., 119°45.40' W long.;
- (310) 34°11.69' N lat., 119°41.80' W long.;
- (311) 34°09.98' N lat., 119°31.87' W long.;
- (312) 34°08.12' N lat., 119°27.71' W long.;
- (313) 34°06.35' N lat., 119°32.65' W long.;
- (314) 34°06.80' N lat., 119°40.08' W long.;
- (315) 34°07.48' N lat., 119°47.54' W long.;
- (316) 34°08.21' N lat., 119°54.90' W long.;
- (317) 34°06.85' N lat., 120°05.60' W long.;
- (318) 34°07.06' N lat., 120°10.42' W long.;
- (319) 34°08.93' N lat., 120°18.34' W long.;
- (320) 34°11.04' N lat., 120°25.20' W long.;
- (321) 34°13.01' N lat., 120°29.29' W long.;
- (322) 34°09.41' N lat., 120°37.69' W long.;
- (323) 34°03.20' N lat., 120°34.52' W long.;
- (324) 33°58.07' N lat., 120°28.33' W long.;
- (325) 33°53.37' N lat., 120°14.43' W long.;
- (326) 33°50.53' N lat., 120°07.20' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (327) 33°45.88' N lat., 120°04.26' W long.;
- (328) 33°38.19' N lat., 119°57.85' W long.;
- (329) 33°38.19' N lat., 119°50.42' W long.;
- (330) 33°42.36' N lat., 119°49.60' W long.;
- (331) 33°53.95' N lat., 119°53.81' W long.;
- (332) 33°55.99' N lat., 119°41.40' W long.;
- (333) 33°58.48' N lat., 119°27.90' W long.;
- (334) 33°59.24' N lat., 119°23.61' W long.;
- (335) 33°59.35' N lat., 119°21.71' W long.;
- (336) 33°59.94' N lat., 119°19.57' W long.;
- (337) 34°04.48' N lat., 119°15.32' W long.;
- (338) 34°02.80' N lat., 119°12.95' W long.;
- (339) 34°02.39' N lat., 119°07.17' W long.;
- (340) 34°03.75' N lat., 119°04.72' W long.;
- (341) 34°01.82' N lat., 119°03.24' W long.;
- (342) 33°59.33' N lat., 119°03.49' W long.;
- (343) 33°59.01' N lat., 118°59.56' W long.;
- (344) 33°59.51' N lat., 118°57.25' W long.;
- (345) 33°58.83' N lat., 118°52.50' W long.;
- (346) 33°58.55' N lat., 118°41.86' W long.;
- (347) 33°55.10' N lat., 118°34.25' W long.;
- (348) 33°54.30' N lat., 118°38.71' W long.;
- (349) 33°50.88' N lat., 118°37.02' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (350) 33°48.70' N lat., 118°31.99' W long.;
- (351) 33°48.87' N lat., 118°29.47' W long.;
- (352) 33°48.37' N lat., 118°29.40' W long.;
- (353) 33°47.63' N lat., 118°31.57' W long.;
- (354) 33°39.78' N lat., 118°18.40' W long.;
- (355) 33°35.50' N lat., 118°16.85' W long.;
- (356) 33°32.46' N lat., 118°10.90' W long.;
- (357) 33°32.81' N lat., 118°07.30' W long.;
- (358) 33°34.38' N lat., 118°05.94' W long.;
- (359) 33°34.42' N lat., 118°03.95' W long.;
- (360) 33°33.40' N lat., 118°01.26' W long.;
- (361) 33°34.11' N lat., 117°54.07' W long.;
- (362) 33°31.61' N lat., 117°49.30' W long.;
- (363) 33°16.36' N lat., 117°35.48' W long.;
- (364) 33°06.81' N lat., 117°22.93' W long.;
- (365) 32°59.28' N lat., 117°19.69' W long.;
- (366) 32°55.37' N lat., 117°19.55' W long.;
- (367) 32°53.12' N lat., 117°17.49' W long.;
- (368) 32°52.56' N lat., 117°20.75' W long.;
- (369) 32°46.42' N lat., 117°23.45' W long.;
- (370) 32°42.71' N lat., 117°21.45' W long.; and
- (371) 32°34.54' N lat., 117°23.04' W long.

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(j) The 125 fm (229 m) depth contour around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°04.86' N lat., 118°37.89' W long.;
- (2) 33°02.67' N lat., 118°34.07' W long.;
- (3) 32°55.97' N lat., 118°28.95' W long.;
- (4) 32°55.06' N lat., 118°27.66' W long.;
- (5) 32°49.79' N lat., 118°20.84' W long.;
- (6) 32°48.02' N lat., 118°19.49' W long.;
- (7) 32°47.37' N lat., 118°21.72' W long.;
- (8) 32°43.58' N lat., 118°24.54' W long.;
- (9) 32°47.74' N lat., 118°30.39' W long.;
- (10) 32°49.74' N lat., 118°32.11' W long.;
- (11) 32°53.36' N lat., 118°33.44' W long.;
- (12) 32°54.89' N lat., 118°35.37' W long.;
- (13) 33°00.20' N lat., 118°38.72' W long.;
- (14) 33°03.15' N lat., 118°39.80' W long.; and
- (15) 33°04.86' N lat., 118°37.89' W long.;

(k) The 125 fm (229 m) depth contour around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°28.42' N. lat., 118°39.85' W. long.;
- (2) 33°29.99' N. lat., 118°36.14' W. long.;
- (3) 33°29.47' N. lat., 118°33.66' W. long.;
- (4) 33°29.31' N. lat., 118°30.53' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (5) 33°27.24' N. lat., 118°27.71' W. long.;
- (6) 33°25.77' N. lat., 118°22.57' W. long.;
- (7) 33°23.76' N. lat., 118°19.27' W. long.;
- (8) 33°17.61' N. lat., 118°13.61' W. long.;
- (9) 33°16.16' N. lat., 118°13.98' W. long.;
- (10) 33°15.86' N. lat., 118°15.27' W. long.;
- (11) 33°18.11' N. lat., 118°27.96' W. long.;
- (12) 33°19.85' N lat., 118°32.25' W long.;
- (13) 33°20.82' N lat., 118°32.98' W long.;
- (14) 33°21.99' N. lat., 118°32.04' W. long.;
- (15) 33°23.09' N. lat., 118°30.37' W. long.;
- (16) 33°24.78' N. lat., 118°32.46' W. long.;
- (17) 33°25.43' N. lat., 118°34.93' W. long.; and
- (18) 33°28.42' N. lat., 118°39.85' W. long.

(l) The 125 fm (229 m) depth contour around Lasuen Knoll off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°24.50' N lat., 118°01.08' W long.;
- (2) 33°23.35' N lat., 117°59.83' W long.;
- (3) 33°23.69' N lat., 117°58.47' W long.;
- (4) 33°24.76' N lat., 117°59.33' W long.; and
- (5) 33°24.50' N lat., 118°01.08' W long.

(m) The 125 fm (229 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°33.96' N lat., 119°4.88' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (2) 33°33.28' N lat., 119°5.88' W long.;
- (3) 33°30.98' N lat., 119°6.32' W long.;
- (4) 33°28.52' N lat., 119°7.7' W long.;
- (5) 33°26.93' N lat., 119°5.94' W long.;
- (6) 33°25.96' N lat., 119°3.34' W long.;
- (7) 33°27.01' N lat., 118°59.73' W long.;
- (8) 33°28.68' N lat., 118°58.43' W long.;
- (9) 33°31.2' N lat., 119°1.09' W long.;
- (10) 33°32.04' N lat., 119° 2.77' W long.; and
- (11) 33°33.96' N lat., 119° 4.88' W long.

(n) The 125 fm (229 m) depth contour around Tanner Bank and Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°46.01' N lat., 119°14.63' W long.;
- (2) 32°44.35' N lat., 119°16.58' W long.;
- (3) 32°40.85' N lat., 119°11.61' W long.;
- (4) 32°38.93' N lat., 119°11.9' W long.;
- (5) 32°41.32' N lat., 119°18.11' W long.;
- (6) 32°36.16' N lat., 119°22.16' W long.;
- (7) 32°33.09' N lat., 119°21.89' W long.;
- (8) 32°30.73' N lat., 119°20.43' W long.;
- (9) 32°28.94' N lat., 119°15.4' W long.;
- (10) 32°27.46' N lat., 119°15.62' W long.;
- (11) 32°24.58' N lat., 119°9.83' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (12) 32°22.97' N lat., 119°3' W long.;
- (13) 32°22.03' N lat., 118°56.26' W long.;
- (14) 32°24.63' N lat., 118°57.54' W long.;
- (15) 32°34.72' N lat., 119°10.24' W long.;
- (16) 32°37.93' N lat., 119°7.88' W long.;
- (17) 32°36.55' N lat., 119°4.42' W long.;
- (18) 32°41.5' N lat., 119°2.65' W long.;
- (19) 32°45.98' N lat., 119°10.71' W long.; and
- (20) 32°46.01' N lat., 119°14.63' W long.

(o) The 125 fm (229 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°31.65' N lat., 119°44.84' W long.;
- (2) 33°28.91' N lat., 119°52.35' W long.;
- (3) 33°25.39' N lat., 119°51.44' W long.;
- (4) 33°17.94' N lat., 119°47.31' W long.;
- (5) 33°15.33' N lat., 119°43.4' W long.;
- (6) 33°14.03' N lat., 119°37.02' W long.;
- (7) 33°11.49' N lat., 119°29.58' W long.;
- (8) 33°11.21' N lat., 119°26.46' W long.;
- (9) 33°12.9' N lat., 119°15.74' W long.;
- (10) 33°14.51' N lat., 119°14.92' W long.;
- (11) 33°14.76' N lat., 119°17.07' W long.;
- (12) 33°17.44' N lat., 119°22.82' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(13) 33°21.37' N lat., 119°27.53' W long.;

(14) 33°23.44' N lat., 119°33.11' W long.; and

(15) 33°31.65' N lat., 119°44.84' W long.

(p) The 150–fm (274–m) depth contour used between the U.S. border with Canada and the U.S. border with Mexico is defined by straight lines connecting all of the following points in the order stated:

(1) 48°14.96' N. lat., 125°41.24' W. long.;

(2) 48°12.89' N. lat., 125°37.83' W. long.;

(3) 48°11.49' N. lat., 125°39.27' W. long.;

(4) 48°10.00' N. lat., 125°40.65' W. long.;

(5) 48°08.72' N. lat., 125°41.84' W. long.;

(6) 48°07.00' N. lat., 125°45.00' W. long.;

(7) 48°06.13' N. lat., 125°41.57' W. long.;

(8) 48°05.00' N. lat., 125°39.00' W. long.;

(9) 48°04.15' N. lat., 125°36.71' W. long.;

(10) 48°03.00' N. lat., 125°36.00' W. long.;

(11) 48°01.65' N. lat., 125°36.96' W. long.;

(12) 48°01.00' N. lat., 125°38.50' W. long.;

(13) 47°57.50' N. lat., 125°36.50' W. long.;

(14) 47°56.53' N. lat., 125°30.33' W. long.;

(15) 47°57.28' N. lat., 125°27.89' W. long.;

(16) 47°59.00' N. lat., 125°25.50' W. long.;

(17) 48°01.77' N. lat., 125°24.05' W. long.;

(18) 48°02.08' N. lat., 125°22.98' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (19) 48°03.00' N. lat., 125°22.50' W. long.;
- (20) 48°03.46' N. lat., 125°22.10' W. long.;
- (21) 48°04.29' N. lat., 125°20.37' W. long.;
- (22) 48°02.00' N. lat., 125°18.50' W. long.;
- (23) 48°00.01' N. lat., 125°19.90' W. long.;
- (24) 47°58.75' N. lat., 125°17.54' W. long.;
- (25) 47°53.50' N. lat., 125°13.50' W. long.;
- (26) 47°48.88' N. lat., 125°05.91' W. long.;
- (27) 47°48.50' N. lat., 125°05.00' W. long.;
- (28) 47°45.98' N. lat., 125°04.26' W. long.;
- (29) 47°45.00' N. lat., 125°05.50' W. long.;
- (30) 47°42.11' N. lat., 125°04.74' W. long.;
- (31) 47°39.00' N. lat., 125°06.00' W. long.;
- (32) 47°35.53' N. lat., 125°04.55' W. long.;
- (33) 47°30.90' N. lat., 124°57.31' W. long.;
- (34) 47°29.54' N. lat., 124°56.50' W. long.;
- (35) 47°29.50' N. lat., 124°54.50' W. long.;
- (36) 47°28.57' N. lat., 124°51.50' W. long.;
- (37) 47°25.00' N. lat., 124°48.00' W. long.;
- (38) 47°23.95' N. lat., 124°47.24' W. long.;
- (39) 47°23.00' N. lat., 124°47.00' W. long.;
- (40) 47°21.00' N. lat., 124°46.50' W. long.;
- (41) 47°18.20' N. lat., 124°45.84' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (42) 47°18.50' N. lat., 124°49.00' W. long.;
- (43) 47°19.17' N. lat., 124°50.86' W. long.;
- (44) 47°18.07' N. lat., 124°53.29' W. long.;
- (45) 47°17.78' N. lat., 124°51.39' W. long.;
- (46) 47°16.81' N. lat., 124°50.85' W. long.;
- (47) 47°15.96' N. lat., 124°53.15' W. long.;
- (48) 47°14.31' N. lat., 124°52.62' W. long.;
- (49) 47°11.87' N. lat., 124°56.90' W. long.;
- (50) 47°12.39' N. lat., 124°58.09' W. long.;
- (51) 47°09.50' N. lat., 124°57.50' W. long.;
- (52) 47°09.00' N. lat., 124°59.00' W. long.;
- (53) 47°06.06' N. lat., 124°58.80' W. long.;
- (54) 47°03.62' N. lat., 124°55.96' W. long.;
- (55) 47°02.89' N. lat., 124°56.89' W. long.;
- (56) 47°01.04' N. lat., 124°59.54' W. long.;
- (57) 46°58.47' N. lat., 124°59.08' W. long.;
- (58) 46°58.36' N. lat., 124°59.82' W. long.;
- (59) 46°56.80' N. lat., 125°00.00' W. long.;
- (60) 46°56.62' N. lat., 125°00.00' W. long.;
- (61) 46°57.09' N. lat., 124°58.86' W. long.;
- (62) 46°55.95' N. lat., 124°54.88' W. long.;
- (63) 46°54.79' N. lat., 124°54.14' W. long.;
- (64) 46°58.00' N. lat., 124°50.00' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (65) 46°54.50' N. lat., 124°49.00' W. long.;
- (66) 46°54.53' N. lat., 124°52.94' W. long.;
- (67) 46°49.52' N. lat., 124°53.41' W. long.;
- (68) 46°42.24' N. lat., 124°47.86' W. long.;
- (69) 46°39.50' N. lat., 124°42.50' W. long.;
- (70) 46°38.17' N. lat., 124°41.50' W. long.;
- (71) 46°37.50' N. lat., 124°41.00' W. long.;
- (72) 46°36.50' N. lat., 124°38.00' W. long.;
- (73) 46°33.85' N. lat., 124°36.99' W. long.;
- (74) 46°33.50' N. lat., 124°29.50' W. long.;
- (75) 46°32.00' N. lat., 124°31.00' W. long.;
- (76) 46°30.53' N. lat., 124°30.55' W. long.;
- (77) 46°25.50' N. lat., 124°33.00' W. long.;
- (78) 46°23.00' N. lat., 124°35.00' W. long.;
- (79) 46°21.05' N. lat., 124°37.00' W. long.;
- (80) 46°20.64' N. lat., 124°36.21' W. long.;
- (81) 46°20.36' N. lat., 124°37.85' W. long.;
- (82) 46°19.48' N. lat., 124°38.35' W. long.;
- (83) 46°17.87' N. lat., 124°38.54' W. long.;
- (84) 46°16.15' N. lat., 124°25.20' W. long.;
- (85) 46°16.00' N. lat., 124°23.00' W. long.;
- (86) 46°14.87' N. lat., 124°26.15' W. long.;
- (87) 46°13.37' N. lat., 124°31.36' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (88) 46°12.08' N. lat., 124°38.39' W. long.;
- (89) 46°09.46' N. lat., 124°40.64' W. long.;
- (90) 46°07.29' N. lat., 124°40.89' W. long.;
- (91) 46°02.76' N. lat., 124°44.01' W. long.;
- (92) 46°01.22' N. lat., 124°43.47' W. long.;
- (93) 45°51.82' N. lat., 124°42.89' W. long.;
- (94) 45°46.00' N. lat., 124°40.88' W. long.;
- (95) 45°45.95' N. lat., 124°40.72' W. long.;
- (96) 45°44.11' N. lat., 124°43.09' W. long.;
- (97) 45°34.50' N. lat., 124°30.28' W. long.;
- (98) 45°21.10' N. lat., 124°23.11' W. long.;
- (99) 45°20.25' N. lat., 124°22.92' W. long.;
- (100) 45°09.69' N. lat., 124°20.45' W. long.;
- (101) 45°03.83' N. lat., 124°23.30' W. long.;
- (102) 44°56.41' N. lat., 124°27.65' W. long.;
- (103) 44°44.47' N. lat., 124°37.85' W. long.;
- (104) 44°37.17' N. lat., 124°38.60' W. long.;
- (105) 44°35.55' N. lat., 124°39.27' W. long.;
- (106) 44°31.81' N. lat., 124°39.60' W. long.;
- (107) 44°31.48' N. lat., 124°43.30' W. long.;
- (108) 44°12.67' N. lat., 124°57.87' W. long.;
- (109) 44°08.30' N. lat., 124°57.84' W. long.;
- (110) 44°07.38' N. lat., 124°57.87' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (111) 43°57.42' N. lat., 124°57.20' W. long.;
- (112) 43°52.52' N. lat., 124°49.00' W. long.;
- (113) 43°51.55' N. lat., 124°37.49' W. long.;
- (114) 43°47.83' N. lat., 124°36.43' W. long.;
- (115) 43°31.79' N. lat., 124°36.80' W. long.;
- (116) 43°29.34' N. lat., 124°36.77' W. long.;
- (117) 43°26.37' N. lat., 124°39.53' W. long.;
- (118) 43°20.83' N. lat., 124°42.39' W. long.;
- (119) 43°16.15' N. lat., 124°44.36' W. long.;
- (120) 43°09.33' N. lat., 124°45.35' W. long.;
- (121) 43°08.77' N. lat., 124°49.82' W. long.;
- (122) 43°08.83' N. lat., 124°50.93' W. long.;
- (123) 43°05.89' N. lat., 124°51.60' W. long.;
- (124) 43°04.60' N. lat., 124°53.02' W. long.;
- (125) 43°02.64' N. lat., 124°52.01' W. long.;
- (126) 43°00.39' N. lat., 124°51.77' W. long.;
- (127) 42°58.00' N. lat., 124°52.99' W. long.;
- (128) 42°57.56' N. lat., 124°54.10' W. long.;
- (129) 42°53.82' N. lat., 124°55.76' W. long.;
- (130) 42°52.31' N. lat., 124°50.76' W. long.;
- (131) 42°50.00' N. lat., 124°48.97' W. long.;
- (132) 42°47.78' N. lat., 124°47.27' W. long.;
- (133) 42°46.31' N. lat., 124°43.60' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (134) 42°41.63' N. lat., 124°44.07' W. long.;
- (135) 42°40.50' N. lat., 124°43.52' W. long.;
- (136) 42°38.83' N. lat., 124°42.77' W. long.;
- (137) 42°35.36' N. lat., 124°43.22' W. long.;
- (138) 42°32.78' N. lat., 124°44.68' W. long.;
- (139) 42°32.02' N. lat., 124°43.00' W. long.;
- (140) 42°30.54' N. lat., 124°43.50' W. long.;
- (141) 42°28.16' N. lat., 124°48.38' W. long.;
- (142) 42°18.26' N. lat., 124°39.01' W. long.;
- (143) 42°13.66' N. lat., 124°36.82' W. long.;
- (144) 42°00.00' N. lat., 124°35.99' W. long.;
- (145) 41°47.80' N. lat., 124°29.41' W. long.;
- (146) 41°23.51' N. lat., 124°29.50' W. long.;
- (147) 41°13.29' N. lat., 124°23.31' W. long.;
- (148) 41°06.23' N. lat., 124°22.62' W. long.;
- (149) 40°55.60' N. lat., 124°26.04' W. long.;
- (150) 40°49.62' N. lat., 124°26.57' W. long.;
- (151) 40°45.72' N. lat., 124°30.00' W. long.;
- (152) 40°40.56' N. lat., 124°32.11' W. long.;
- (153) 40°37.33' N. lat., 124°29.27' W. long.;
- (154) 40°35.60' N. lat., 124°30.49' W. long.;
- (155) 40°37.38' N. lat., 124°37.14' W. long.;
- (156) 40°36.03' N. lat., 124°39.97' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (157) 40°31.58' N. lat., 124°40.74' W. long.;
- (158) 40°30.30' N. lat., 124°37.63' W. long.;
- (159) 40°28.22' N. lat., 124°37.23' W. long.;
- (160) 40°24.86' N. lat., 124°35.71' W. long.;
- (161) 40°23.01' N. lat., 124°31.94' W. long.;
- (162) 40°23.39' N. lat., 124°28.64' W. long.;
- (163) 40°22.29' N. lat., 124°25.25' W. long.;
- (164) 40°21.90' N. lat., 124°25.18' W. long.;
- (165) 40°22.02' N. lat., 124°28.00' W. long.;
- (166) 40°21.34' N. lat., 124°29.53' W. long.;
- (167) 40°19.74' N. lat., 124°28.95' W. long.;
- (168) 40°18.13' N. lat., 124°27.08' W. long.;
- (169) 40°17.45' N. lat., 124°25.53' W. long.;
- (170) 40°17.97' N. lat., 124°24.12' W. long.;
- (171) 40°15.96' N. lat., 124°26.05' W. long.;
- (172) 40°17.00' N. lat., 124°35.01' W. long.;
- (173) 40°15.97' N. lat., 124°35.90' W. long.;
- (174) 40°10.00' N. lat., 124°22.96' W. long.;
- (175) 40°07.00' N. lat., 124°19.00' W. long.;
- (176) 40°08.10' N. lat., 124°16.70' W. long.;
- (177) 40°05.90' N. lat., 124°17.77' W. long.;
- (178) 40°02.99' N. lat., 124°15.55' W. long.;
- (179) 40°02.00' N. lat., 124°12.97' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (180) 40°02.60' N. lat., 124°10.61' W. long.;
- (181) 40°03.63' N. lat., 124°09.12' W. long.;
- (182) 40°02.18' N. lat., 124°09.07' W. long.;
- (183) 39°58.25' N. lat., 124°12.56' W. long.;
- (184) 39°57.03' N. lat., 124°11.34' W. long.;
- (185) 39°56.30' N. lat., 124°08.96' W. long.;
- (186) 39°54.82' N. lat., 124°07.66' W. long.;
- (187) 39°52.57' N. lat., 124°08.55' W. long.;
- (188) 39°49.10' N. lat., 124°06.00' W. long.;
- (189) 39°48.94' N. lat., 124°04.74' W. long.;
- (190) 39°48.60' N. lat., 124°04.50' W. long.;
- (191) 39°47.95' N. lat., 124°05.22' W. long.;
- (192) 39°45.34' N. lat., 124°03.30' W. long.;
- (193) 39°39.82' N. lat., 123°59.98' W. long.;
- (194) 39°34.59' N. lat., 123°58.08' W. long.;
- (195) 39°34.22' N. lat., 123°56.82' W. long.;
- (196) 39°32.98' N. lat., 123°56.43' W. long.;
- (197) 39°31.64' N. lat., 123°56.16' W. long.;
- (198) 39°31.40' N. lat., 123°56.70' W. long.;
- (199) 39°32.35' N. lat., 123°57.42' W. long.;
- (200) 39°31.47' N. lat., 123°58.73' W. long.;
- (201) 39°05.68' N. lat., 123°57.81' W. long.;
- (202) 39°00.24' N. lat., 123°56.74' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (203) 38°57.50' N. lat., 123°56.74' W. long.;
- (204) 38°54.31' N. lat., 123°56.73' W. long.;
- (205) 38°41.42' N. lat., 123°46.75' W. long.;
- (206) 38°39.61' N. lat., 123°46.48' W. long.;
- (207) 38°37.52' N. lat., 123°43.78' W. long.;
- (208) 38°35.25' N. lat., 123°42.00' W. long.;
- (209) 38°28.79' N. lat., 123°37.07' W. long.;
- (210) 38°18.75' N. lat., 123°31.21' W. long.;
- (211) 38°14.43' N. lat., 123°25.56' W. long.;
- (212) 38°08.75' N. lat., 123°24.48' W. long.;
- (213) 38°10.10' N. lat., 123°27.20' W. long.;
- (214) 38°07.16' N. lat., 123°28.18' W. long.;
- (215) 38°06.15' N. lat., 123°30.00' W. long.;
- (216) 38°04.28' N. lat., 123°31.70' W. long.;
- (217) 38°01.88' N. lat., 123°30.98' W. long.;
- (218) 38°00.75' N. lat., 123°29.72' W. long.;
- (219) 38°00.00' N. lat., 123°28.60' W. long.;
- (220) 37°58.23' N. lat., 123°26.90' W. long.;
- (221) 37°55.32' N. lat., 123°27.19' W. long.;
- (222) 37°51.47' N. lat., 123°24.92' W. long.;
- (223) 37°44.47' N. lat., 123°11.57' W. long.;
- (224) 37°35.67' N. lat., 123°01.76' W. long.;
- (225) 37°26.10' N. lat., 122°57.07' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (226) 37°26.51' N. lat., 122°54.23' W. long.;
- (227) 37°25.05' N. lat., 122°55.64' W. long.;
- (228) 37°24.42' N. lat., 122°54.94' W. long.;
- (229) 37°25.16' N. lat., 122°52.73' W. long.;
- (230) 37°24.55' N. lat., 122°52.48' W. long.;
- (231) 37°22.81' N. lat., 122°54.36' W. long.;
- (232) 37°19.87' N. lat., 122°53.98' W. long.;
- (233) 37°15.16' N. lat., 122°51.64' W. long.;
- (234) 37°11.00' N. lat., 122°47.20' W. long.;
- (235) 37°07.00' N. lat., 122°42.90' W. long.;
- (236) 37°01.68' N. lat., 122°37.28' W. long.;
- (237) 36°59.70' N. lat., 122°33.71' W. long.;
- (238) 36°58.00' N. lat., 122°27.80' W. long.;
- (239) 37°00.25' N. lat., 122°24.85' W. long.;
- (240) 36°57.50' N. lat., 122°24.98' W. long.;
- (241) 36°58.38' N. lat., 122°21.85' W. long.;
- (242) 36°55.85' N. lat., 122°21.95' W. long.;
- (243) 36°52.02' N. lat., 122°12.10' W. long.;
- (244) 36°47.63' N. lat., 122°07.37' W. long.;
- (245) 36°47.26' N. lat., 122°03.22' W. long.;
- (246) 36°50.34' N. lat., 121°58.40' W. long.;
- (247) 36°48.83' N. lat., 121°59.14' W. long.;
- (248) 36°47.60' N. lat., 121°58.88' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (249) 36°48.24' N. lat., 121°51.40' W. long.;
- (250) 36°45.84' N. lat., 121°57.21' W. long.;
- (251) 36°45.77' N. lat., 121°57.61' W. long.;
- (252) 36°44.81' N. lat., 121°58.28' W. long.;
- (253) 36°39.00' N. lat., 122°01.71' W. long.;
- (254) 36°29.60' N. lat., 122°00.49' W. long.;
- (255) 36°23.43' N. lat., 121°59.76' W. long.;
- (256) 36°18.90' N. lat., 122°05.32' W. long.;
- (257) 36°15.38' N. lat., 122°01.40' W. long.;
- (258) 36°13.79' N. lat., 121°58.12' W. long.;
- (259) 36°10.12' N. lat., 121°43.33' W. long.;
- (260) 36°02.57' N. lat., 121°37.02' W. long.;
- (261) 36°01.01' N. lat., 121°36.69' W. long.;
- (262) 36°00.00' N. lat., 121°35.45' W. long.;
- (263) 35°57.74' N. lat., 121°33.45' W. long.;
- (264) 35°51.32' N. lat., 121°30.08' W. long.;
- (265) 35°45.84' N. lat., 121°28.84' W. long.;
- (266) 35°38.94' N. lat., 121°23.16' W. long.;
- (267) 35°26.00' N. lat., 121°08.00' W. long.;
- (268) 35°07.42' N. lat., 120°57.08' W. long.;
- (269) 34°42.76' N. lat., 120°55.09' W. long.;
- (270) 34°37.75' N. lat., 120°51.96' W. long.;
- (271) 34°29.29' N. lat., 120°44.19' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (272) 34°27.00' N. lat., 120°40.42' W. long.;
- (273) 34°21.89' N. lat., 120°31.36' W. long.;
- (274) 34°20.79' N. lat., 120°21.58' W. long.;
- (275) 34°23.97' N. lat., 120°15.25' W. long.;
- (276) 34°22.11' N. lat., 119°56.63' W. long.;
- (277) 34°19.00' N. lat., 119°48.00' W. long.;
- (278) 34°15.00' N. lat., 119°48.00' W. long.;
- (279) 34°08.00' N. lat., 119°37.00' W. long.;
- (280) 34°08.39' N. lat., 119°54.78' W. long.;
- (281) 34°07.10' N lat., 120°10.37' W long.;
- (282) 34°09.00' N lat., 120°18.40' W long.;
- (283) 34°11.07' N lat., 120°25.03' W long.;
- (284) 34°13.16' N lat., 120°29.40' W long.;
- (285) 34°09.41' N lat., 120°37.75' W long.;
- (286) 34°03.15' N lat., 120°34.71' W long.;
- (287) 33°57.09' N lat., 120°27.76' W long.;
- (288) 33°51.00' N lat., 120°09.00' W long.;
- (289) 33°38.16' N lat., 119°59.23' W long.;
- (290) 33°37.04' N lat., 119°50.17' W long.;
- (291) 33°42.28' N lat., 119°48.85' W long.;
- (292) 33°53.96' N lat., 119°53.77' W long.;
- (293) 33°55.88' N lat., 119°41.05' W long.;
- (294) 33°59.18' N lat., 119°23.64' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (295) 33°59.26' N lat., 119°21.92' W long.;
- (296) 33°59.94' N lat., 119°19.57' W long.;
- (297) 34°03.12' N lat., 119°15.51' W long.;
- (298) 34°01.97' N lat., 119°07.28' W long.;
- (299) 34°03.60' N lat., 119°04.71' W long.;
- (300) 33°59.30' N lat., 119°03.73' W long.;
- (301) 33°58.87' N lat., 118°59.37' W long.;
- (302) 33°58.08' N lat., 118°41.14' W long.;
- (303) 33°50.93' N lat., 118°37.65' W long.;
- (304) 33°39.54' N lat., 118°18.70' W long.;
- (305) 33°35.42' N lat., 118°17.14' W long.;
- (306) 33°32.15' N lat., 118°10.84' W long.;
- (307) 33°33.71' N lat., 117°53.72' W long.;
- (308) 33°31.17' N lat., 117°49.11' W long.;
- (309) 33°16.53' N lat., 117°36.13' W long.;
- (310) 33°06.77' N lat., 117°22.92' W long.;
- (311) 32°58.94' N lat., 117°20.05' W long.;
- (312) 32°55.83' N lat., 117°20.15' W long.;
- (313) 32°46.29' N lat., 117°23.89' W long.;
- (314) 32°42.00' N lat., 117°22.16' W long.;
- (315) 32°39.47' N lat., 117°27.78' W long.; and
- (316) 32°34.83' N lat., 117°24.69' W long.

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(q) The 150 fm (274 m) depth contour used around San Clemente Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°47.95' N. lat., 118°19.31' W. long.;
- (2) 32°49.79' N. lat., 118°20.82' W. long.;
- (3) 32°55.99' N. lat., 118°28.80' W. long.;
- (4) 33°03.00' N. lat., 118°34.00' W. long.;
- (5) 33°05.00' N. lat., 118°38.00' W. long.;
- (6) 33°03.21' N. lat., 118°39.85' W. long.;
- (7) 33°01.93' N. lat., 118°39.85' W. long.;
- (8) 32°54.69' N. lat., 118°35.45' W. long.;
- (9) 32°53.28' N. lat., 118°33.58' W. long.;
- (10) 32°48.26' N. lat., 118°31.62' W. long.;
- (11) 32°43.03' N. lat., 118°24.21' W. long.;
- (12) 32°47.15' N. lat., 118°21.53' W. long.; and
- (13) 32°47.95' N. lat., 118°19.31' W. long.

(r) The 150 fm (274 m) depth contour used around Santa Catalina Island off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°17.24' N. lat., 118°12.94' W. long.;
- (2) 33°23.60' N. lat., 118°18.79' W. long.;
- (3) 33°26.00' N. lat., 118°22.00' W. long.;
- (4) 33°27.57' N. lat., 118°27.69' W. long.;
- (5) 33°29.78' N. lat., 118°31.01' W. long.;
- (6) 33°30.46' N. lat., 118°36.52' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (7) 33°28.65' N. lat., 118°41.07' W. long.;
- (8) 33°23.23' N. lat., 118°30.69' W. long.;
- (9) 33°20.97' N. lat., 118°33.29' W. long.;
- (10) 33°19.81' N. lat., 118°32.24' W. long.;
- (11) 33°18.00' N. lat., 118°28.00' W. long.;
- (12) 33°15.62' N. lat., 118°14.74' W. long.;
- (13) 33°16.00' N. lat., 118°13.00' W. long.; and
- (14) 33°17.24' N. lat., 118°12.94' W. long.

(s) The 150 fm (274 m) depth contour used around Lasuen Knoll off the state of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°25.07' N lat., 117°59.26' W long.;
- (2) 33°23.69' N lat., 117°58.13' W long.;
- (3) 33°23.18' N lat., 117°59.87' W long.;
- (4) 33°24.61' N lat., 118°01.31' W long.; and
- (5) 33°25.07' N lat., 117°59.26' W long.

(t) The 150 fm (274 m) depth contour used between the U.S. border with Canada and 40°10' N. lat., modified to allow fishing in petrale sole areas, is defined by straight lines connecting all of the following points in the order stated:

- (1) 48°14.96' N. lat., 125°41.24' W. long.;
- (2) 48°12.89' N. lat., 125°37.83' W. long.;
- (3) 48°11.49' N. lat., 125°39.27' W. long.;
- (4) 48°10.00' N. lat., 125°40.65' W. long.;
- (5) 48°08.72' N. lat., 125°41.84' W. long.;
- (6) 48°07.00' N. lat., 125°45.00' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (7) 48°06.13' N. lat., 125°41.57' W. long.;
- (8) 48°05.00' N. lat., 125°39.00' W. long.;
- (9) 48°04.15' N. lat., 125°36.71' W. long.;
- (10) 48°03.00' N. lat., 125°36.00' W. long.;
- (11) 48°01.65' N. lat., 125°36.96' W. long.;
- (12) 48°01.00' N. lat., 125°38.50' W. long.;
- (13) 47°57.50' N. lat., 125°36.50' W. long.;
- (14) 47°56.53' N. lat., 125°30.33' W. long.;
- (15) 47°57.28' N. lat., 125°27.89' W. long.;
- (16) 47°59.00' N. lat., 125°25.50' W. long.;
- (17) 48°01.77' N. lat., 125°24.05' W. long.;
- (18) 48°02.08' N. lat., 125°22.98' W. long.;
- (19) 48°03.00' N. lat., 125°22.50' W. long.;
- (20) 48°03.46' N. lat., 125°22.10' W. long.;
- (21) 48°04.29' N. lat., 125°20.37' W. long.;
- (22) 48°02.00' N. lat., 125°18.50' W. long.;
- (23) 48°00.01' N. lat., 125°19.90' W. long.;
- (24) 47°58.75' N. lat., 125°17.54' W. long.;
- (25) 47°53.50' N. lat., 125°13.50' W. long.;
- (26) 47°48.88' N. lat., 125°05.91' W. long.;
- (27) 47°48.50' N. lat., 125°05.00' W. long.;
- (28) 47°45.98' N. lat., 125°04.26' W. long.;
- (29) 47°45.00' N. lat., 125°05.50' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (30) 47°42.11' N. lat., 125°04.74' W. long.;
- (31) 47°39.00' N. lat., 125°06.00' W. long.;
- (32) 47°35.53' N. lat., 125°04.55' W. long.;
- (33) 47°30.90' N. lat., 124°57.31' W. long.;
- (34) 47°29.54' N. lat., 124°56.50' W. long.;
- (35) 47°29.50' N. lat., 124°54.50' W. long.;
- (36) 47°28.57' N. lat., 124°51.50' W. long.;
- (37) 47°25.00' N. lat., 124°48.00' W. long.;
- (38) 47°23.95' N. lat., 124°47.24' W. long.;
- (39) 47°23.00' N. lat., 124°47.00' W. long.;
- (40) 47°21.00' N. lat., 124°46.50' W. long.;
- (41) 47°18.20' N. lat., 124°45.84' W. long.;
- (42) 47°18.50' N. lat., 124°49.00' W. long.;
- (43) 47°19.17' N. lat., 124°50.86' W. long.;
- (44) 47°18.07' N. lat., 124°53.29' W. long.;
- (45) 47°17.78' N. lat., 124°51.39' W. long.;
- (46) 47°16.81' N. lat., 124°50.85' W. long.;
- (47) 47°15.96' N. lat., 124°53.15' W. long.;
- (48) 47°14.31' N. lat., 124°52.62' W. long.;
- (49) 47°11.87' N. lat., 124°56.90' W. long.;
- (50) 47°12.39' N. lat., 124°58.09' W. long.;
- (51) 47°09.50' N. lat., 124°57.50' W. long.;
- (52) 47°09.00' N. lat., 124°59.00' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (53) 47°06.06' N. lat., 124°58.80' W. long.;
- (54) 47°03.62' N. lat., 124°55.96' W. long.;
- (55) 47°02.89' N. lat., 124°56.89' W. long.;
- (56) 47°01.04' N. lat., 124°59.54' W. long.;
- (57) 46°58.47' N. lat., 124°59.08' W. long.;
- (58) 46°58.36' N. lat., 124°59.82' W. long.;
- (59) 46°56.80' N. lat., 125°00.00' W. long.;
- (60) 46°56.62' N. lat., 125°00.00' W. long.;
- (61) 46°57.09' N. lat., 124°58.86' W. long.;
- (62) 46°55.95' N. lat., 124°54.88' W. long.;
- (63) 46°54.79' N. lat., 124°54.14' W. long.;
- (64) 46°58.00' N. lat., 124°50.00' W. long.;
- (65) 46°54.50' N. lat., 124°49.00' W. long.;
- (66) 46°54.53' N. lat., 124°52.94' W. long.;
- (67) 46°49.52' N. lat., 124°53.41' W. long.;
- (68) 46°42.24' N. lat., 124°47.86' W. long.;
- (69) 46°39.50' N. lat., 124°42.50' W. long.;
- (70) 46°38.17' N. lat., 124°41.50' W. long.;
- (71) 46°37.50' N. lat., 124°41.00' W. long.;
- (72) 46°36.50' N. lat., 124°38.00' W. long.;
- (73) 46°33.85' N. lat., 124°36.99' W. long.;
- (74) 46°33.50' N. lat., 124°29.50' W. long.;
- (75) 46°32.00' N. lat., 124°31.00' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (76) 46°30.53' N. lat., 124°30.55' W. long.;
- (77) 46°25.50' N. lat., 124°33.00' W. long.;
- (78) 46°23.00' N. lat., 124°35.00' W. long.;
- (79) 46°21.05' N. lat., 124°37.00' W. long.;
- (80) 46°20.64' N. lat., 124°36.21' W. long.;
- (81) 46°20.36' N. lat., 124°37.85' W. long.;
- (82) 46°19.48' N. lat., 124°38.35' W. long.;
- (83) 46°17.87' N. lat., 124°38.54' W. long.;
- (84) 46°16.15' N. lat., 124°25.20' W. long.;
- (85) 46°16.00' N. lat., 124°23.00' W. long.;
- (86) 46°14.87' N. lat., 124°26.15' W. long.;
- (87) 46°13.37' N. lat., 124°31.36' W. long.;
- (88) 46°12.08' N. lat., 124°38.39' W. long.;
- (89) 46°09.46' N. lat., 124°40.64' W. long.;
- (90) 46°07.29' N. lat., 124°40.89' W. long.;
- (91) 46°02.76' N. lat., 124°44.01' W. long.;
- (92) 46°01.22' N. lat., 124°43.47' W. long.;
- (93) 45°51.82' N. lat., 124°42.89' W. long.;
- (94) 45°46.00' N. lat., 124°40.88' W. long.;
- (95) 45°45.95' N. lat., 124°40.72' W. long.;
- (96) 45°45.21' N. lat., 124°41.70' W. long.;
- (97) 45°42.72' N. lat., 124°41.22' W. long.;
- (98) 45°34.50' N. lat., 124°30.28' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (99) 45°21.10' N. lat., 124°23.11' W. long.;
- (100) 45°20.25' N. lat., 124°22.92' W. long.;
- (101) 45°09.69' N. lat., 124°20.45' W. long.;
- (102) 45°03.83' N. lat., 124°23.30' W. long.;
- (103) 44°56.41' N. lat., 124°27.65' W. long.;
- (104) 44°44.47' N. lat., 124°37.85' W. long.;
- (105) 44°37.17' N. lat., 124°38.60' W. long.;
- (106) 44°35.55' N. lat., 124°39.27' W. long.;
- (107) 44°31.81' N. lat., 124°39.60' W. long.;
- (108) 44°31.48' N. lat., 124°43.30' W. long.;
- (109) 44°12.67' N. lat., 124°57.87' W. long.;
- (110) 44°08.30' N. lat., 124°57.84' W. long.;
- (111) 44°07.38' N. lat., 124°57.87' W. long.;
- (112) 43°57.42' N. lat., 124°57.20' W. long.;
- (113) 43°52.52' N. lat., 124°49.00' W. long.;
- (114) 43°51.55' N. lat., 124°37.49' W. long.;
- (115) 43°47.83' N. lat., 124°36.43' W. long.;
- (116) 43°31.79' N. lat., 124°36.80' W. long.;
- (117) 43°29.34' N. lat., 124°36.77' W. long.;
- (118) 43°26.37' N. lat., 124°39.53' W. long.;
- (119) 43°20.83' N. lat., 124°42.39' W. long.;
- (120) 43°16.15' N. lat., 124°44.36' W. long.;
- (121) 43°09.33' N. lat., 124°45.35' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (122) 43°08.77' N. lat., 124°49.82' W. long.;
- (123) 43°08.83' N. lat., 124°50.93' W. long.;
- (124) 43°05.89' N. lat., 124°51.60' W. long.;
- (125) 43°04.60' N. lat., 124°53.02' W. long.;
- (126) 43°02.64' N. lat., 124°52.01' W. long.;
- (127) 43°00.39' N. lat., 124°51.77' W. long.;
- (128) 42°58.00' N. lat., 124°52.99' W. long.;
- (129) 42°57.56' N. lat., 124°54.10' W. long.;
- (130) 42°53.93' N. lat., 124°54.60' W. long.;
- (131) 42°53.26' N. lat., 124°53.94' W. long.;
- (132) 42°52.31' N. lat., 124°50.76' W. long.;
- (133) 42°50.00' N. lat., 124°48.97' W. long.;
- (134) 42°47.78' N. lat., 124°47.27' W. long.;
- (135) 42°46.31' N. lat., 124°43.60' W. long.;
- (136) 42°41.63' N. lat., 124°44.07' W. long.;
- (137) 42°40.50' N. lat., 124°43.52' W. long.;
- (138) 42°38.83' N. lat., 124°42.77' W. long.;
- (139) 42°35.36' N. lat., 124°43.22' W. long.;
- (140) 42°32.78' N. lat., 124°44.68' W. long.;
- (141) 42°32.02' N. lat., 124°43.00' W. long.;
- (142) 42°30.54' N. lat., 124°43.50' W. long.;
- (143) 42°28.16' N. lat., 124°48.38' W. long.;
- (144) 42°18.26' N. lat., 124°39.01' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (145) 42°13.66' N. lat., 124°36.82' W. long.;
- (146) 42°00.00' N. lat., 124°35.99' W. long.;
- (147) 41°47.80' N. lat., 124°29.41' W. long.;
- (148) 41°41.67' N. lat., 124°29.46' W. long.;
- (149) 41°22.80' N. lat., 124°29.10' W. long.;
- (150) 41°13.29' N. lat., 124°23.31' W. long.;
- (151) 41°06.23' N. lat., 124°22.62' W. long.;
- (152) 40°55.60' N. lat., 124°26.04' W. long.;
- (153) 40°53.97' N. lat., 124°26.16' W. long.;
- (154) 40°53.94' N. lat., 124°26.10' W. long.;
- (155) 40°50.31' N. lat., 124°26.16' W. long.;
- (156) 40°49.82' N. lat., 124°26.58' W. long.;
- (157) 40°49.62' N. lat., 124°26.57' W. long.;
- (158) 40°45.72' N. lat., 124°30.00' W. long.;
- (159) 40°40.56' N. lat., 124°32.11' W. long.;
- (160) 40°38.87' N. lat., 124°30.18' W. long.;
- (161) 40°38.38' N. lat., 124°30.18' W. long.;
- (162) 40°37.33' N. lat., 124°29.27' W. long.;
- (163) 40°35.60' N. lat., 124°30.49' W. long.;
- (164) 40°37.38' N. lat., 124°37.14' W. long.;
- (165) 40°36.03' N. lat., 124°39.97' W. long.;
- (166) 40°31.58' N. lat., 124°40.74' W. long.;
- (167) 40°30.30' N. lat., 124°37.63' W. long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (168) 40°28.22' N. lat., 124°37.23' W. long.;
- (169) 40°24.86' N. lat., 124°35.71' W. long.;
- (170) 40°23.01' N. lat., 124°31.94' W. long.;
- (171) 40°23.39' N. lat., 124°28.64' W. long.;
- (172) 40°22.29' N. lat., 124°25.25' W. long.;
- (173) 40°21.90' N. lat., 124°25.18' W. long.;
- (174) 40°22.02' N. lat., 124°28.00' W. long.;
- (175) 40°21.34' N. lat., 124°29.53' W. long.;
- (176) 40°19.74' N. lat., 124°28.95' W. long.;
- (177) 40°18.13' N. lat., 124°27.08' W. long.;
- (178) 40°17.45' N. lat., 124°25.53' W. long.;
- (179) 40°17.97' N. lat., 124°24.12' W. long.;
- (180) 40°15.96' N. lat., 124°26.05' W. long.;
- (181) 40°16.90' N. lat., 124°34.20' W. long.;
- (182) 40°16.29' N. lat., 124°34.50' W. long.;
- (183) 40°14.91' N. lat., 124°33.60' W. long.; and
- (184) 40°10.00' N. lat., 124°22.96' W. long.

(u) The 150 fm (274 m) depth contour around Santa Barbara Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°34.6' N lat., 119°4.57' W long.;
- (2) 33°33.13' N lat., 119°6.65' W long.;
- (3) 33°28.13' N lat., 119°8.17' W long.;
- (4) 33°25.55' N lat., 119°3.64' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(5) 33°26.96' N lat., 118°59.58' W long.;

(6) 33°28.68' N lat., 118°58.24' W long.; and (7) 33°34.6' N lat., 119°4.57' W long.;

(v) The 150 fm (274 m) depth contour around Tanner Bank and Cortes Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

(1) 32°46.12' N lat., 119°14.73' W long.;

(2) 32°44.37' N lat., 119°16.82' W long.;

(3) 32°41.02' N lat., 119°12.01' W long.;

(4) 32°39.28' N lat., 119°12.18' W long.;

(5) 32°41.46' N lat., 119°18.28' W long.;

(6) 32°36.17' N lat., 119°22.31' W long.;

(7) 32°32.97' N lat., 119°22.31' W long.;

(8) 32°30.57' N lat., 119°20.54' W long.;

(9) 32°28.94' N lat., 119°15.53' W long.;

(10) 32°27.45' N lat., 119°15.79' W long.;

(11) 32°24.86' N lat., 119°12.93' W long.;

(12) 32°21.43' N lat., 118°55.1' W long.;

(13) 32°24.67' N lat., 118°57.37' W long.;

(14) 32°34.34' N lat., 119°9.28' W long.;

(15) 32°37.39' N lat., 119°7.54' W long.;

(16) 32°36.38' N lat., 119°4.32' W long.;

(17) 32°41.59' N lat., 119°2.46' W long.;

(18) 32°46.07' N lat., 119°10.68' W long.; and

(19) 32°46.12' N lat., 119°14.73' W long.

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

(w) The 150 fm (274 m) depth contour around San Nicholas Island off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°33.22' N lat., 119°46.7' W long.;
- (2) 33°28.97' N lat., 119°53.04' W long.;
- (3) 33°24.67' N lat., 119°51.27' W long.;
- (4) 33°19.95' N lat., 119°50.23' W long.;
- (5) 33°13.07' N lat., 119°41.99' W long.;
- (6) 33°13.1' N lat., 119°34.66' W long.;
- (7) 33°11.45' N lat., 119°29.57' W long.;
- (8) 33°11.13' N lat., 119°26.22' W long.;
- (9) 33°11.8' N lat., 119°20.64' W long.;
- (10) 33°12.91' N lat., 119°15.53' W long.;
- (11) 33°14.52' N lat., 119°14.72' W long.;
- (12) 33°15.32' N lat., 119°16.01' W long.;
- (13) 33°14.78' N lat., 119°16.97' W long.;
- (14) 33°15.73' N lat., 119°19.02' W long.;
- (15) 33°16.73' N lat., 119°18.97' W long.;
- (16) 33°19.37' N lat., 119°24.95' W long.;
- (17) 33°21.69' N lat., 119°27.44' W long.;
- (18) 33°23.82' N lat., 119°32.87' W long.; and
- (19) 33°33.22' N lat., 119°46.7' W long.

(x) The 150 fm (274 m) depth contour around Osborn Bank off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 33°23.53' N lat., 119°3.73' W long.;

§ 660.73 Latitude/longitude coordinates defining the 100 fm (183 m) through 150 fm (274 m) depth contours

- (2) 33°23.57' N lat., 119°6.66' W long.;
- (3) 33°23.12' N lat., 119°7.25' W long.;
- (4) 33°20.51' N lat., 119°2.15' W long.;
- (5) 33°20.58' N lat., 119°0.48' W long.;
- (6) 33°21.32' N lat., 118°59.89' W long.; and
- (7) 33°23.53' N lat., 119°3.73' W long.

(y) The 150 fm (274 m) depth contour around the Eastern CCA area off the State of California is defined by straight lines connecting all of the following points in the order stated:

- (1) 32°41.41' N lat., 117°59.05' W long.;
- (2) 32°40.57' N lat., 118°1.97' W long.;
- (3) 32°40.04' N lat., 118°1.23' W long.;
- (4) 32°39.82' N lat., 118°0.03' W long.;
- (5) 32°38.02' N lat., 117°57.86' W long.;
- (6) 32°35.38' N lat., 117°56.23' W long.;
- (7) 32°36.68' N lat., 117°55.02' W long.;
- (8) 32°40.42' N lat., 117°57.15' W long.; and
- (9) 32°41.41' N lat., 117°59.05' W long.

[[69 FR 77059](#), Dec. 23, 2004; [70 FR 13119](#), Mar. 18, 2005, as amended at [70 FR 16149](#), Mar. 30, 2005; [71 FR 8500](#), Feb. 17, 2006; [71 FR 78678](#), Dec. 29, 2006; [74 FR 9905](#), Mar. 6, 2009. Redesignated at [75 FR 60995](#), Oct. 1, 2010; [76 FR 27531](#), May 11, 2011; [76 FR 54714](#), Sept. 2, 2011; [78 FR 589](#), Jan. 3, 2013; [80 FR 12573](#), Mar. 10, 2015; [82 FR 9640](#), Feb. 7, 2017; [83 FR 63992](#), Dec. 12, 2018; [83 FR 66639](#), Dec. 27, 2018; [84 FR 63974](#), Nov. 19, 2019; [85 FR 79893](#), Dec. 11, 2020; [86 FR 14381](#), Mar. 16, 2021; [87 FR 77017](#), Dec. 16, 2022; [88 FR 83846](#), Dec. 1, 2023]



Notice: Regulation Change Considerations to Recreational Crab Gear

17 April 2025

Presented to:

CA Fish and Game Commission

Presented by:

Christy Juhasz

**Senior ES Specialist, Invertebrate Program
Marine Region**



Overview

- Fishery Background
- Proposed changes
- Outreach
- Proposed Timeline



Photo Credit: Christy Juhasz/CDFW

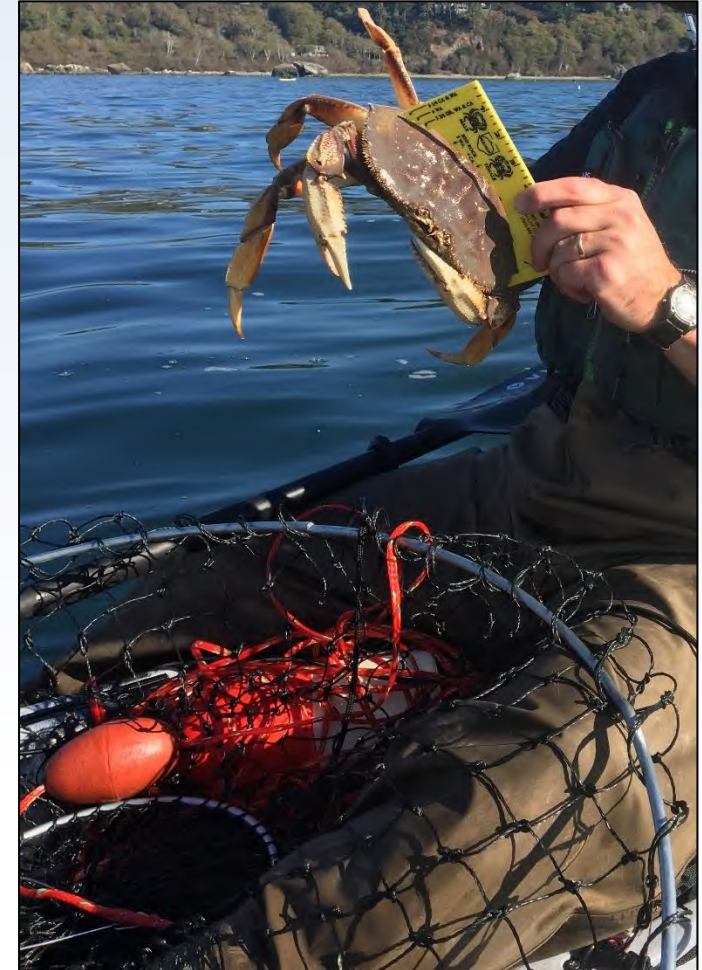


Photo Credit: Ed Roberts/CDFW



Fishery Background

- Recreational Dungeness crab fishery
 - Season: first Saturday of November until June 30 or July 30
 - Gear: Hand, loop trap, hoop net, and crab trap
- 2021 Crab trap changes
 - Implemented an Entanglement Risk Evaluation for restricting crab traps
 - Established Crab Validation to gather essential fisheries information
- 2022 Hoop Net changes
 - Noted increase in the use of hoop nets
 - Clarified definition of hoop nets



Proposed Changes (§§29.85, 195, 701)

Petition	Current Regulations	Proposed Change
Validation Stamp	Recreational Crab Trap Validation	Trap Validation (exempt if from CPFV) CPFV Validation (new fee)
CPFV Logbook	Forms incorporated by reference	Remove forms while adding current form fields that includes 2 new fields: 1) number of crab traps; and 2) number of hoop nets



Proposed Changes (§29.80)

Hoop Nets	Current Regulations	Proposed Change
Tampering Prohibition	Crab Traps	Crab Traps Hoop Nets
Surface Gear for Hoop Nets (north Point Arguello)	Shall be marked with a buoy	Set maximum size of main buoy and allow optional yellow marker buoy with set maximum size; no more than 3 feet away from main buoy



Proposed Changes (§29.80 Cont. 1)

Entanglement Risk Evaluation	Current Regulations	Proposed Change
Management Trigger	Marine Life Concentrations	Marine Life Concentration Confirmed Entanglements
Management Action	Fleet Advisory Trap Gear Prohibition	Fleet Advisory Trap Gear Prohibition Depth Constraint



Proposed Changes (§29.80 Cont. 2)

Line Marking	Current Regulations	Proposed Change
Recreational crab traps and hoop nets	No unique line marking specified	Prohibit unique line marking from other fisheries



Photo Credit: CDFW



Photo Credit: CDFW



Photo Credit: CDFW



Outreach

- MRC meetings – July & November 2024
- Public Meeting Webinar – September 2024
- Presented to Industry – October 2024
 - Dungeness Crab Fishing Gear Working Group
 - Dungeness Crab Task Force
- Tribal Notifications – Nov/Dec 2024



Proposed Timeline

Notice
April 17, 2025
(Today)

Adoption
August 14, 2025

Discussion
June 11, 2025

Effective
November 1, 2025
Recreational Dungeness
crab Season

Thank You



Questions:

WhaleSafeFisheries@wildlife.ca.gov

Staff Summary for December 11-12, 2024
(For background purposes only)

5. Recreational Take of Barred Sand Bass

Today's Item

Information ☐

Action ☒

Consider authorizing publication of notice of intent to amend recreational fishing regulations for barred sand bass.

Summary of Previous/Future Actions

- | | |
|---|-----------------------------|
| • Department update to the Marine Resources Committee (MRC) and discussion on the recreational barred sand bass fishery and considerations for potential regulation changes | July 17-18, 2024; MRC |
| • Update and MRC recommendation | November 6-7, 2024; MRC |
| • Today's notice hearing | December 11-12, 2024 |
| • Discussion hearing | February 12-13, 2025 |
| • Adoption hearing | April 16-17, 2025 |

Background

The recreational barred sand bass fishery is open year-round and managed collectively with kelp bass and spotted sand bass. Current regulations were established in 2013 due to concerns about the status of kelp bass and barred sand bass populations; the regulations impose a 5-fish bag limit for any combination of the three species and a 14-inch minimum size limit.

Recent data analysis has revealed a significantly depleted population of barred sand bass in southern California. Both fishery-independent and fishery-dependent data indicate a lack of substantial recruitment in recent years, which suggests that the 2013 regulations have not adequately protected the stock. As a result, the Department began consulting with fishing industry representatives, fishery researchers, and other stakeholders to explore potential regulatory changes.

In June 2024, the Department requested, and the Commission agreed to, refer the topic of barred sand bass to MRC. MRC discussed the issue in July and November of 2024 (see Exhibit 1 for a summary of population trends, management responses, and stakeholder engagement).

Based on discussions with a Department-formed working group, at the November 2024 MRC meeting, the Department proposed for the recreational take of barred sand bass a near-term reduction of the sub-bag limit from 5 to 4 fish within the overall bag limit of 5 fish (for any combination of kelp bass, barred sand bass, and spotted sand bass), with a 3-year sunset provision. This interim measure was proposed to ensure conservation of barred sand bass while the Department, alongside stakeholders, addresses data gaps and modeling needs and evaluates potential future regulatory proposals.

Staff Summary for December 11-12, 2024
(For background purposes only)

MRC supported the proposed sunset provision and recommended that the Commission authorize a notice of intent to amend regulations governing the recreational take of barred sand bass, to commence in December (this meeting), with a 3-year sunset provision as proposed by the Department. However, MRC expressed concern about the adequacy of the proposed interim sub-bag limit for barred sand bass, particularly during spawning season. Instead of endorsing a specific sub-bag limit, MRC recommended including a range of options (1-5 fish) for setting sub-bag limits during and outside the spawning season, to allow the Commission to deliberate and make the final decision.

For today's meeting, the Department's memo (Exhibit 2) outlines the recommended changes to recreational barred sand bass regulations, aligned with the MRC recommendation. The memo includes draft proposed regulatory language the Commission may choose to refine or direct staff to modify prior to notice. The proposal includes:

- a sub-bag limit for barred sand bass during the spawning season (June through August), ranging from 1 to 5 fish;
- a sub-bag limit for barred sand bass during all other months, ranging from 1 to 5 fish; and
- a sunset provision for the new regulation, repealing the regulation as of June 1, 2028.

Visual aids and additional background information on the proposal are in the Department's presentation (Exhibit 3).

If the Commission chooses to select specific sub-bag limits in the proposed regulatory language, the initial statement of reasons developed prior to issuing notice could clarify that during the rulemaking process the Commission is still considering a range of sub-bag limits for recreational take of barred sand bass.

Significant Public Comments

Two fisheries scientists and an environmental non-governmental organization (NGO) recommend a zero-fish bag limit (aka closure) during the spawning season (June through August) (exhibits 4-6). The scientists argue that the barred sand bass fishery is not data-limited, it is a misconception that existing data are inadequate, and stronger measures are needed to recover spawning aggregations and rebuild the fishery (exhibits 4 and 5).

- A fisheries scientist also recommends coupling the seasonal closure with a size limit reduction to 13 inches, drawing on key vulnerability factors for the fishery and lessons learned from management measures in other fisheries (Exhibit 4).
- A scientist who served as a barred sand bass expert on the Department's collaborative working group, highlights previous management measures in the fishery and assesses contemporary scientific data, including 31 published scientific papers from 1996 to 2024 on barred sand bass. They argue a seasonal closure would not cause significant hardship to the recreational fishery, and that potential short-term economic impacts should not outweigh action necessary to ensure the fishery's long-term health. (Exhibit 5)

Staff Summary for December 11-12, 2024

(For background purposes only)

- An environmental NGO urges the Commission to incorporate into its public notice a zero-fish bag limit option for June through August, and to ultimately adopt this closure option at the adoption hearing (Exhibit 6).

Recommendation

Commission staff: Authorize publication of a notice of intent to amend regulations as recommended by MRC and the Department. Confirm the proposed season dates in the draft regulatory language and identify sub-bag limits for the two time periods to include in the notice, to support transparency during the notice period.

Committee: Authorize publication of a notice of intent to amend regulations regarding recreational take of barred sand bass with a sub-bag limit range of 1 to 5 fish, a season date option for differing bag limits, and a three-year sunset provision.

Department: Authorize publication of a notice of intent to amend regulations regarding recreational take of barred sand bass as outlined in the Department's memo and presentation.

Exhibits

1. Staff summary for Agenda Item 5, November 6-7, 2024 MRC (*for background purposes only*)
2. Department memo, including draft proposed regulatory language, received November 27, 2024
3. Department presentation
4. Email from Erica Mason, Ph.D., received November 25, 2024
5. Email from Lyall Belquist, Ph.D., received November 26, 2024
6. Email from Greg Helms, Manager, Fish Conservation Program, Ocean Conservancy, received December 2, 2024

Motion

Moved by _____ and seconded by _____ that the Commission authorizes publication of a notice of its intent to amend Section 28.30 related to recreational take of barred sand bass, with a sub-bag limit range of _____ fish for the summer spawning season (June through August); a sub-bag limit range of _____ fish for the remainder of the year; and a sunset provision of three years, to expire June 1, 2028, as discussed today; and requests that the Department continue to collaborate with the sport fishing industry, researchers, and stakeholders to fill data gaps and develop longer-term management options.

Committee Staff Summary for November 6-7, 2024 MRC

*(For background purposes only)***5. Recreational Barred Sand Bass Fishery****Today's Item****Information** ☐**Action** ☒

Receive and discuss Department's update on the recreational barred sand bass fishery, barred sand bass working group outcomes, and recommendations for potential regulation changes; develop potential committee recommendation.

Summary of Previous/Future Actions

- Department update and discussion on the recreational barred sand bass fishery and considerations for potential regulation changes July 17-18, 2024; MRC
- **Today receive an update and recommendations for potential regulation changes** **November 6-7, 2024; MRC**

Background

The barred sand bass fishery is an historic recreational fishery in southern California that is open year-round and managed collectively with kelp bass and spotted sand bass. Current regulations include a five-fish bag limit (in any combination of the three species) and a minimum size limit of 14 inches (35.6 centimeters); these were established in 2013 due to concerns about the status of kelp bass and barred sand bass stocks.

Population Trends, Management Response, and Stakeholder Engagement

While no formal stock assessment exists for barred sand bass, abundance estimates suggest a severely depressed population in southern California. The presumed decline is likely due to a combination of environmental conditions, poor recruitment, and fishing pressure on easily targeted spawning aggregations.

The Department has analyzed available data for the species. Fishery-dependent data indicate continued declines in barred sand bass, except for the past year, with spawning aggregations becoming much smaller or difficult to find. Fishery-independent data over the past several years have shown a pulse of fish entering the fishery, corroborated by the fishery-dependent data showing a slight increase in catch. However, there has been no sizeable recruitment pulse seen behind the entry fish, suggesting that current regulations established in 2013 (lower bag limit and increased size limit) are insufficient to protect the stock, especially if the observed year class of juveniles enters the fishery and fishing effort increases.

Due to population concerns, the Department began discussions with the recreational fishing community and academic community about potential changes to barred sand bass fishery regulations. The Department also requested the Commission refer the topic to MRC and committed to bring a range of recommendations for MRC discussion.

July 2024 MRC Meeting

Committee Staff Summary for November 6-7, 2024 MRC
(For background purposes only)

At the July MRC meeting, the Department presented an overview of the available data for barred sand bass, highlighted outreach to date regarding the types of potential management changes under consideration, and described additional collaboration with sport fishing associations and researchers to help recover barred sand bass populations while minimizing impacts to recreational fishing. The Department committed to forming a working group of researchers, recreational fishery representatives, and stakeholders to jointly develop a recommendation for recreational fishery regulations to bring to the November 2024 MRC meeting for discussion, and to support developing a potential recommendation for Commission consideration.

Update

Following the July MRC meeting, the Department convened and has worked closely with a group of sport fishing associations and researchers, including facilitating two meetings. The goals of the working group are to improve shared understanding of the current status of the barred sand bass population and fishery; develop a shared understanding of the current need for a conservation measure; identify information gaps and strategies to collaborate on future data collection; and support an open, collaborative process to share information on the species and fishery.

Today, the Department will present additional details regarding barred sand bass life history and fishery analyses reviewed with the working group, present the outcomes of the working group and its collaboratively-developed options for regulation changes, and provide recommendations for discussion and potential committee recommendation (Exhibit 1). The Department supports a management measure for a period of three years, during which time Department staff would continue to work with stakeholders to fill priority research gaps and develop a long-term conservation strategy to protect barred sand bass spawning aggregations.

Significant Public Comments

1. A sport fishing association representative, who is also a member of the Department's barred sand bass working group, supports the recommended barred sand bass sub-bag limit of four as a three-year, interim, conservation measure (Exhibit 2). They also support utilizing sport fishing organizations to fill knowledge and data gaps. In addition, they share observations about the fishery, including barred sand bass migration and spawning behavior, the relationship between catch rate and regulations, and shifts in fishing effort.
2. A representative of a recreational fishing advocacy organization shares the Department's concern about the health of the barred sand bass population and urges the Commission to take steps to allow it to recover (Exhibit 3). Rather than changing bag or size limits, they propose closing some of the known spawning aggregation sites in southern California to barred sand bass fishing for a specific period or closing barred sand bass fishing during spawning months, as there are other sport fishing opportunities available in the summer. Alternatively, they suggest the regulation changes could be a combination of some fraction of the spawning season combined with size and bag limit adjustments.

Committee Staff Summary for November 6-7, 2024 MRC

*(For background purposes only)***Recommendation**

Commission staff: Support the Department's recommendation to advance a regulation for the barred sand bass fishery, with a regulation sunset date, and public notice in December as discussed today. Support continuation of the Department's work with stakeholders to fill data gaps and develop a long-term conservation strategy for barred sand bass.

Department: Support developing an interim regulation of a year-round bag limit of four barred sand bass, with no more than five bass in combination, with a sunset date after three years, while the Department continues to work with stakeholders to fill priority research gaps and develop a long-term conservation strategy based on best available science to protect barred sand bass spawning aggregations.

Exhibits

1. Department presentation
2. Email from Merit McCrea, Sportfishing Association of California, received October 24, 2024
3. Email from Matt Band, Allwaters Protection & Access Coalition, received October 24, 2024

Committee Direction/Recommendation

The Marine Resources Committee recommends that the Commission: (1) schedule a rulemaking with notice in December 2024 to set a year-round bag limit of four barred sand bass, with no more than five bass in combination, and a regulation sunset of three years, as recommended by the Department; and (2) support the Department's efforts to continue to work with stakeholders to fill priority research gaps and develop a long-term conservation strategy based on best available science to protect barred sand bass spawning aggregations.

State of California
Fish and Game Commission
Initial Statement of Reasons for Regulatory Action

Amend Section 28.30
Title 14, California Code of Regulations
Re: Recreational Take of Barred Sand Bass

I. Date of Initial Statement of Reasons: December 11, 2024

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing:

Date: December 11, 2024

Location: Sacramento

(b) Discussion Hearing:

Date: February 12-13, 2025

Location: Sacramento

(c) Adoption Hearing:

Date: April 16-17, 2025

Location: Sacramento

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR). Commission refers to the California Fish and Game Commission unless otherwise specified. Department refers to the California Department of Fish and Wildlife unless otherwise specified.

The proposed changes focus on Section 28.30(b), which defines a minimum size limit and a bag and possession limit for kelp bass, barred sand bass, and spotted sand bass combined for recreational fishers. The last time these regulations were subject to major amendment was March 2013 which decreased the bag limit from ten to five in aggregate of the three jointly managed saltwater bass species (*Paralabrax sp.*) and increased the minimum size limit from 12 to 14 inches. Reduced bag and possession limits for barred sand bass during the spawning season were also recommended as an option, but the species-specific regulation was not adopted. The stock of barred sand bass has shown slow signs of recovery since 2013. This could be due to several factors including continued fishing pressure during the summer spawning months when barred sand bass are most vulnerable to fishing and intermittent recruitment of young-of-the-year. The proposed amendment represents the cumulation of the Department's internal discussion as well as input from industry representatives, fishery researchers, fishing communities, and the California Fish and Game Commission Marine Resources Committee (MRC). The proposed changes are necessary to preserve fishing opportunity and ensure the sustainable management of barred sand bass.

BACKGROUND

Barred sand bass (*Paralabrax nebulifer*) are one of the most common sea basses inhabiting southern California coastal waters along with the two other species of bass: kelp bass (*Paralabrax clathratus*) and spotted sand bass (*Paralabrax maculatofasciatus*). Barred sand bass are generalist mesopredators and range from southern Baja California, Mexico to central California, though are rare north of Point Conception. Juveniles can be found over shallow sandy bottoms in bays and estuaries, while adults tend to inhabit the ecotone where sand meets rocky reef. Barred sand bass have a small home range; however, in the months of June through August have been observed and tracked making large migratory movements to spawning grounds tens of kilometers away from their home reef where they form large spawning aggregations. This historically happens over soft bottom habitat though the past couple of years has been observed over hard bottom. They mature between two to five years, can live up to 25 years, and can grow up to 67 centimeters (cm) (26 inches) in length.

For decades, barred sand bass ranked as one of the most commonly caught and retained marine sport fishes in southern California. In the summer months, commercial passenger sport fishing vessels (CPFVs) and private fishing boats targeted the large spawning aggregations, as this is when the fish are easily found and caught. From the 1990s through early 2000s, annual landings of barred sand bass exceeding 500,000 were not uncommon from CPFVs logs (Figure 1). CPFV landings declined in the late 2000s and have remained a fraction of the previous decade's landings. Regulations were passed in 2013 that decreased the bag limit from ten to five in aggregate of the three jointly managed saltwater bass species (*Paralabrax sp.*) and increased the minimum size limit from 12 to 14 inches. Reduced bag and possession limits for barred sand bass during the spawning season were also recommended as an option, but the species-specific regulation was not adopted. Unlike kelp bass, the stock of barred sand bass has shown slow signs of recovery since the 2013 regulation implementation. This slow recovery could be due to several factors, including continued fishing pressure during the summer months when barred sand bass form spawning aggregations and intermittent recruitment of young-of-the-year.

Barred sand bass aggregating behavior during spawning season makes them particularly vulnerable to fishing. These summertime aggregations are well known by the fishing fleet and have been targeted for decades. This aggregating behavior masks decreases in the population while giving the illusion that the stock is healthy since catch rates are stable and landings are high (Erisman et al 2011). Over time, the population can become so small that not enough members of the population remain to continue to form aggregations. This has been the case for barred sand bass in southern California for nearly the past decade, but in the last couple of years signs of these aggregations returning at their historic locations have begun to show (Figure 2).

The increase in barred sand bass landings in 2023 and 2024 are most likely a result of a large larvae recruitment event. In the last 60 years, there have been four major recruitment pulses for barred sand bass, with the last one occurring in the mid-2010s (Jarvis Mason et al. 2024). It takes approximately eight years for a barred sand bass to reach 14 inches to enter the fishery. Starting in 2017, the Department initiated scuba surveys in barred sand

bass preferred habitat in which staff count and size barred sand bass and other fishes. These annual surveys capture the cohorts of barred sand bass getting larger each year (Figure 3). While these observations of the increasing population size of barred sand bass is a promising sign that the population is recovering, it is apparent that there have been no large recruitment events after the pulse in the mid-2010s. The proposed sunset regulation provisions are intended to reduce the overall number of barred sand bass taken by reducing fishing effort during their spawning season when they are most susceptible to fishing. These three years of reduced fishing effort allows for the development of future regulations that use best available science to guide a sustainable measure that takes into consideration what is best for the fishery.

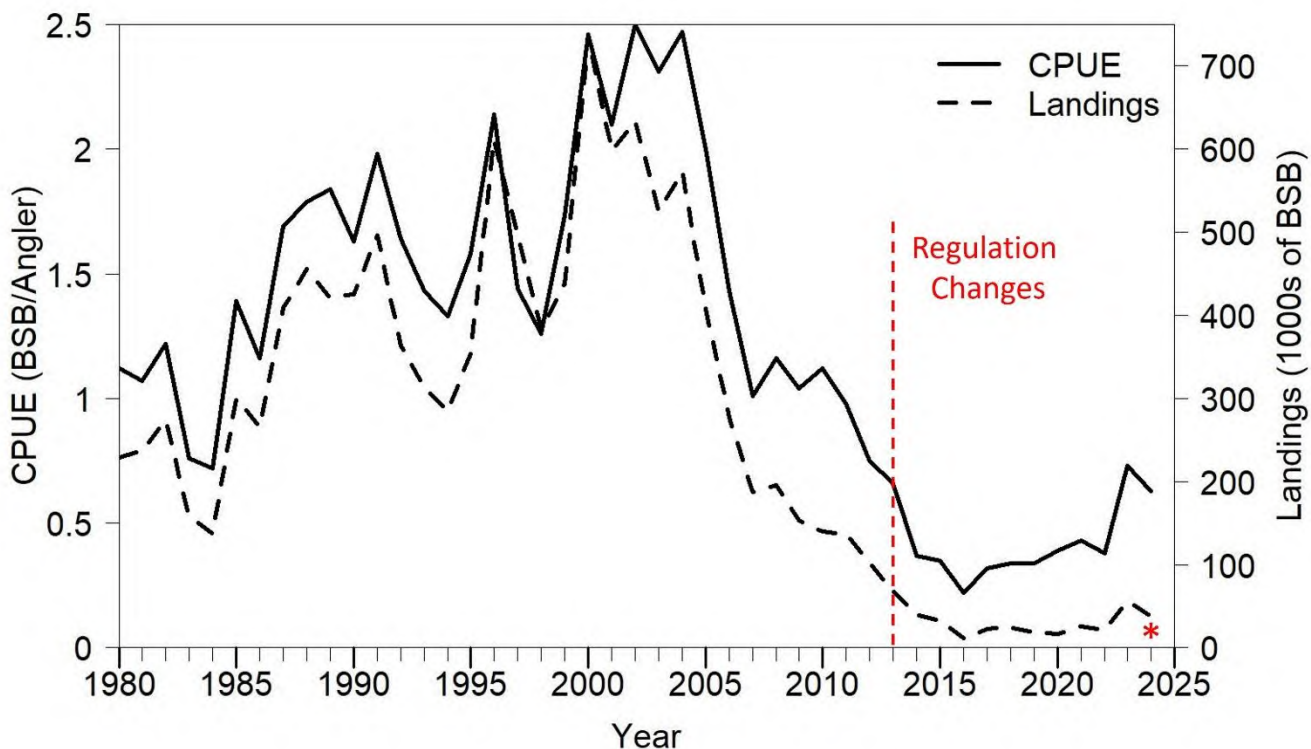


Figure 1. Catch per unit effort (CPUE, solid line) and landings (hashed line) of barred sand bass retained on CPFV trips from 1980 to 2024 (CDFW Marine Log System 2024). The red hashed line denotes the 2013 regulation changes, and the red asterisk denotes the 2024 data is preliminary and only contains data from January through September.

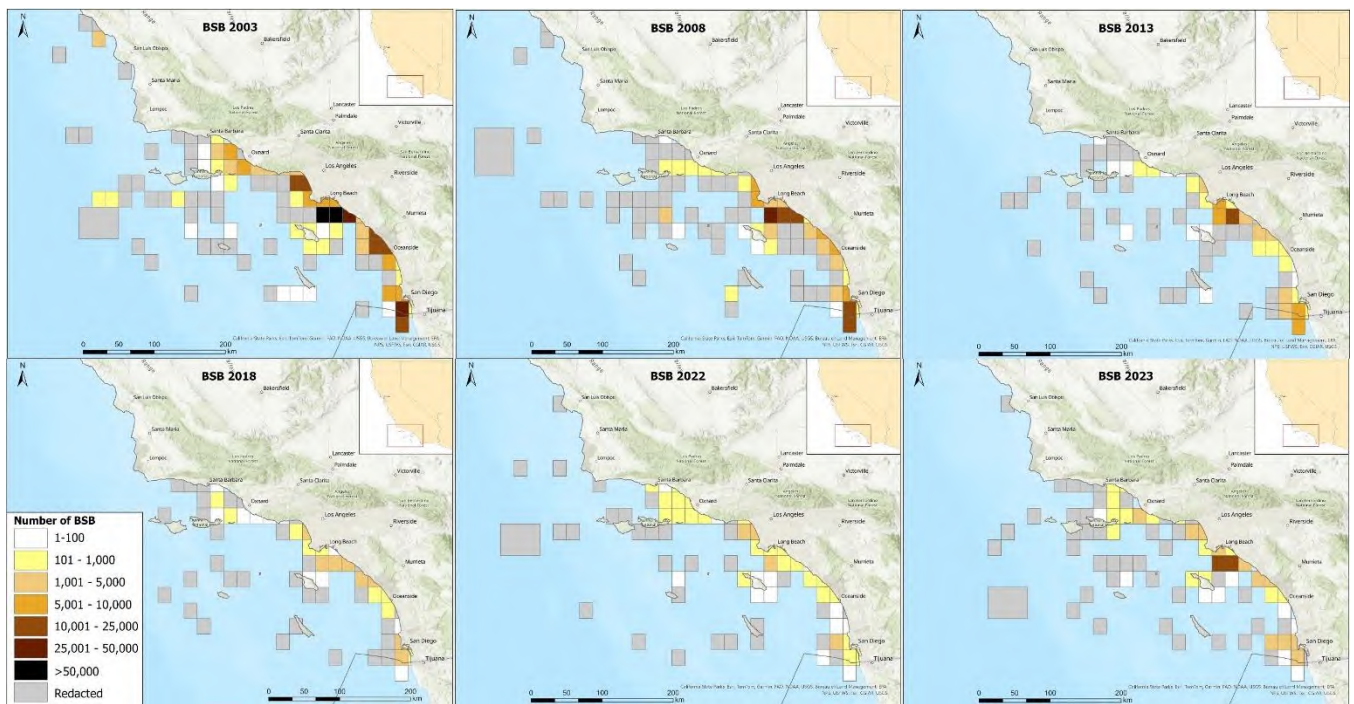


Figure 1. Heat maps of barred sand bass landings by CDFW fishing block for the years of 2003, 2008, 2013, 2018, 2022, and 2023 (CDFW Marine Log System 2024).

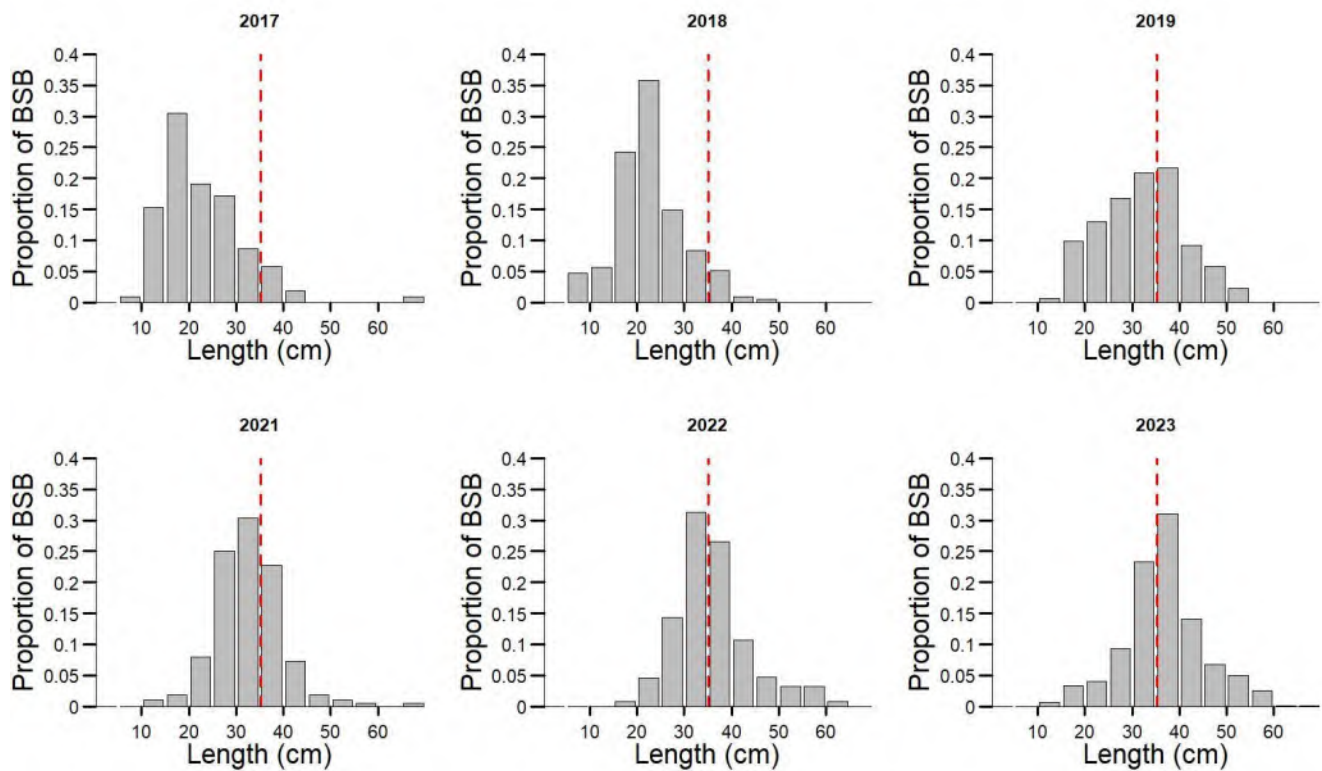


Figure 2. Size distribution data (5 cm bins) from CDFW barred sand bass scuba surveys (CDFW unpublished data 2024).

CURRENT REGULATIONS

Current laws governing barred sand bass are as follows:

Section 28.30 defines a minimum size limit and a bag and possession limit for kelp bass, barred sand bass, and spotted sand bass combined for recreational fishers. Current laws specify that the minimum size limit for the three species is 14 inches total length or ten inches alternate length (§28.30(a)). The bag and possession limit is five in any combination of species (§28.30(b)).

PROPOSED REGULATIONS

Proposed language in Section 28.30 includes a range of options for a sub-bag and possession limit for barred sand bass within the overall five-fish combined limit for kelp bass, barred sand bass and spotted sand bass, to be decided through the Commission public noticing process. The options are a range of bag and possession limits of 0-5 barred sand bass, varying seasonally, with a sunset provision ending June 1, 2028. Per direction from the MRC, a range of bag and possession limit options to consider in amending Title 14, Section 28.30 is described below:

Subsection 28.30(c)(1) is proposed to be added, which would create a limit within the spawning season on barred sand bass, which typically occurs from June to August. The bag and possession limit (0-5) for the spawning season (June 1-August 31) and for the will be determined by the Commission. This is necessary to reduce the overall number of barred sand bass taken by the fishery, specifically during the summer spawning months when barred sand bass are most vulnerable to fishing while forming spawning aggregations.

Subsection 28.30(c)(2) is proposed to be added, which would create a limit during all other months on barred sand bass (i.e., non-spawning seasons September 1-May 30). The bag and possession limit (1-5) will be determined by the Commission for these months. This is necessary to define the bag and possession for the months outside of the summer spawning season.

Subsection 28.30(d) is proposed to be added to provide for a sunset provision for subsection 28.30(c), repealing it as of June 1, 2028. The sunset provision is necessary to allow for conservation of barred sand bass while the Department works with partners on further reviewing data and developing models to evaluate potential future regulations that will help increase and sustain the barred sand bass population and support public fishing opportunities.

No changes are proposed for subsection 28.30(a) or 28.30(b).

(b) Goals and Benefits of the Regulation

The policy of this state is “to ensure the conservation, sustainable use, and, where feasible, restoration of California’s marine living resources for the benefit of all the citizens of the State” (Fish and Game Code Section 7050(b)). Additionally, The Marine Life Management Act (MLMA) is intended to ensure the conservation, sustainable use, and restoration of California’s marine living resources. In 2019, the Department assessed the state’s fisheries

under the 2018 Master Plan for Fisheries framework (Department 2018). A prioritization process identified barred sand bass as a high priority species in need of management attention. Adoption of the proposed bag and possession limits, and seasonal restrictions provides for the sustainable management of barred sand bass while preserving fishing opportunity.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Authority: Sections 200, 205, 219, 265 and 275, Fish and Game Code.

Reference: Sections 110, 200, 205, 219, 255, 265, 270 and 275, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change: None

(e) Identification of Reports or Documents Supporting Regulation Change

California Department of Fish and Wildlife. 2018. [California Marine Life Management Act Master Plan](#).

California Department of Fish and Wildlife. 2024. [Barred Sand Bass, *Paralabrax nebulifer*, Enhanced Status Report](#).

Erismann BE, Allen LG, Claisse JT, Pondella DJ, Miller EF, Murray JH, Walters C. 2011. The illusion of plenty: hyperstability masks collapses in two recreational fisheries that target fish spawning aggregations. *Canadian Journal of Fisheries and Aquatic Sciences* 68: 1705-1716.

Jarvis ET, Gliniak HL, Valle CF. 2014. Effects of fishing and the environment on the long-term sustainability of the recreational saltwater bass fishery in southern California. *California Fish and Game* 100(2): 234-259.

Jarvis Mason ET, Watson W, Ward EJ, Thompson AR, Semmens BX. 2024. Environment-driven trends in fish larval abundance predict fishery recruitment in two temperate reef congeners: Mechanisms and implications for fishery recovery under a changing ocean. *bioRxiv*, 2023-10.

(f) Public Discussions of Proposed Regulations Prior to Notice Publication

- February 20, 2024, presentation and discussion with representatives of the fishing community, remote attendance
- February 21, 2024, presentation and discussion with representatives of the research community, remote attendance
- April 30, 2024, presentation and discussion with representatives of the fishing community, remote attendance
- July 17-18, 2024, Marine Resources Committee meeting, update and discussion, Sacramento
- September 4, 2024, Barred Sand Bass Working Group meeting, Seal Beach
- October 7, 2024, Barred Sand Bass Working Group meeting update, remote attendance
- November 7, 2024, Marine Resources Committee meeting, update and recommendations, Sacramento

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change

No alternatives were identified by or brought to the attention of Commission staff that would have the same desired regulatory effect.

(b) No Change Alternative

Without the proposed changes, the outstanding issues concerning the regulations currently governing barred sand bass would remain unaddressed.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States:

The proposed action will not have a significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states. The Commission anticipates that the impact of the proposed regulations on the entirety of marine sport fishing activity is not expected to be sufficient to significantly impact sport fishing expenditures to businesses within the state.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment:

The Commission does not anticipate any significant impacts on the creation or elimination of jobs, the creation of new businesses, the elimination of existing businesses, or the expansion of businesses in California. Sport fish-related businesses may have to adjust to changes in the composition of recreational fishing opportunities, but these changes are not expected to be substantial due to the fishery being kept open and from the sufficient substitutability of kelp bass as an alternative species.

(c) Cost Impacts on a Representative Private Person or Business:

The Commission is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State:
None

(e) Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State:

The cumulative effects of the changes statewide are estimated to be neutral to job creation or elimination within the state. No significant changes in total fishing effort and fishing expenditures to businesses are expected as a direct result of the proposed regulation changes. However, some short-term job losses may occur as sport fish-related businesses adjust to changes in the composition of recreational fishing opportunities.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State:

The cumulative effects of the changes statewide are expected to be neutral to the creation or elimination of businesses in California. No significant changes in total fishing effort and recreational fishing expenditures to businesses are expected as a direct result of the proposed regulation changes.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State:

The cumulative effects of the changes statewide are expected to be neutral to expansion of businesses currently doing business within the state. No significant changes in total fishing effort and recreational fishing expenditures to businesses are expected as a direct result of the proposed regulation changes.

(d) Benefits of the Regulation to the Health and Welfare of California Residents:

Providing sustainable fishing opportunities encourages recreation, which can have a positive impact on the health and welfare of California residents.

(e) Benefits of the Regulation to Worker Safety

The Commission does not anticipate impacts to worker safety from the proposed regulations.

(f) Benefits of the Regulation to the State's Environment

It is the policy of this state to encourage the conservation, sustainable use, and where feasible, restoration of California's marine living resources for the benefit of all citizens of the state (Section 7050, Fish and Game Code). Benefits of the proposed management actions include preserving fishing opportunity, along with the continuation of the reasonable and sustainable management of barred sand bass resources.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The barred sand bass fishery is a historic recreational fishery in southern California that is open year-round and managed collectively with kelp bass and spotted sand bass. Current regulations include a five-fish bag limit (in any combination of the three species) and a minimum size limit of 14 inches (35.6 centimeters); these were established in 2013 due to concerns about the status of kelp bass and barred sand bass stocks. While no formal stock assessment exists for barred sand bass, abundance estimates, based on fishery independent data, suggest a severely depressed population in southern California. The presumed decline is likely due to a combination of environmental conditions, poor recruitment, and fishing pressure on easily targeted spawning aggregations.

In consultation with fishing industry representatives, fishery researchers, and stakeholders, and with guidance from the Commission's Marine Resources Committee (MRC), the Department proposes modifications to Title 14, Section 28.30. Proposed language in 28.30, intended to limit take and possession of barred sand bass, includes a range of options for a sub-bag and possession limit for barred sand bass within the overall five-fish combined limit for kelp bass, barred sand bass and spotted sand bass, to be decided through the Commission public noticing process. The options are a range of bag and possession limits of 0-5 barred sand bass, varying seasonally, with a sunset provision ending June 1, 2028. This sunset provision allows for conservation of barred sand bass while the Department works with stakeholders on further reviewing data and developing models to evaluate potential future regulations that will help increase and sustain the barred sand bass population and support public fishing opportunities. The proposed regulation amendment is intended to reduce the overall number of barred sand bass taken by the fishery, specifically during the spawning months when barred sand bass are most vulnerable to fishing.

The proposed changes are as follows:

Subsection 28.30(b) is proposed to be amended to specify bag limit changes to one species, barred sand bass, within the salt water basses complex. This amendment is necessary to further protect barred sand bass spawning aggregations.

Add subsection (c)(1) which would create a limit within the spawning season on barred sand bass (June 1 through August 31) and (c)(2) which would create a limit during all other months. The square brackets indicate a range within which a final number will be determined by the Commission. Add subsection (d) which would provide for a sunset provision for subsection (c), repealing it as of June 1, 2028.

The subsections would read as follows:

(c) Barred Sand Bass Limit: Notwithstanding subsection (b):

(1) From June 1-August 31 a maximum of [0-5] barred sand bass may be taken or possessed.

(2) From September 1-May 31 a maximum of [1-5] barred sand bass may be taken or possessed.

(d) Sunset Provision: Subsection (c) shall remain in effect until June 1, 2028, and as of that date is repealed.

Benefit of the Regulations:

The Commission anticipates benefits to the State's environment by sustainably managing California's ocean resources. The barred sand bass population would benefit from reduced fishing effort during their spawning season when they are most susceptible to fishing, which ultimately supports a more sustainable fishery in the long term. The adoption of scientifically based limits provides for the maintenance of sufficient populations of barred sand bass to ensure their continued existence for the environment and for the businesses that rely on recreational barred sand bass fishing.

Consistency and Compatibility with Existing Regulations:

Article IV, Section 20 of the State Constitution specifies that the Legislature may delegate to the Commission such powers related to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated authority to the Commission to promulgate recreational fishing regulations (Fish and Game Code sections 200 and 205). Commission staff has searched the California Code of Regulations and has found no other state regulations that address the recreational take of barred sand bass. The Commission has reviewed its own regulations and finds that the proposed regulations are consistent with other recreational fishing regulations in Title 14, CCR, and therefore finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulation.

Proposed Regulatory Language

Section 28.30, Title 14, California Code of Regulations is amended as follows:

§ 28.30. Kelp Bass, Barred Sand Bass and Spotted Sand Bass.

(a) Minimum size: Fourteen inches total length or ten inches alternate length.

(b) Limit: Five in any combination of species, except as provided in subsection (c).

(c) Barred Sand Bass Limit: Notwithstanding subsection (b)

(1) From June 1-August 31 a maximum of [0-5] barred sand bass may be taken or possessed.

(2) From September 1-May 31 a maximum of [1-5] barred sand bass may be taken or possessed.

(d) Sunset Provision: Subsection (c) shall remain in effect until June 1, 2028, and as of that date is repealed.

NOTE: Authority cited: Sections 200, 205, 219, 265 and 275, Fish and Game Code.

Reference: Sections 110, 200, 205, 219, 255, 265, 270 and 275, Fish and Game Code.

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME Fish and Game Commission	CONTACT PERSON David Thesell	EMAIL ADDRESS fgc@fgc.ca.gov	TELEPHONE NUMBER 916 201-6201
DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400 Amend Section 28.30, CCR, Title 14, Re: Recreational Take of Barred Sand Bass			NOTICE FILE NUMBER Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:

- ☐ a. Impacts business and/or employees
- ☐ b. Impacts small businesses
- ☐ c. Impacts jobs or occupations
- ☐ d. Impacts California competitiveness
- ☐ e. Imposes reporting requirements
- ☐ f. Imposes prescriptive instead of performance
- ☐ g. Impacts individuals
- ☒ h. None of the above (Explain below):

These changes are not expected to be substantial due to the fishery being kept open and from the sufficient substitutability of kelp bass, see addend.

*If any box in Items 1 a through g is checked, complete this Economic Impact Statement.
If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.*

2. The **California Fish and Game Commission** estimates that the economic impact of this regulation (which includes the fiscal impact) is:
(Agency/Department)

☒ Below \$10 million

☐ Between \$10 and \$25 million

☐ Between \$25 and \$50 million

☐ Over \$50 million *[If the economic impact is over \$50 million, agencies are required to submit a [Standardized Regulatory Impact Assessment](#) as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: _____

Describe the types of businesses (Include nonprofits): _____

Enter the number or percentage of total businesses impacted that are small businesses: _____

4. Enter the number of businesses that will be created: _____ eliminated: _____

Explain: _____

5. Indicate the geographic extent of impacts: ☐ Statewide
☐ Local or regional (List areas): _____

6. Enter the number of jobs created: _____ and eliminated: _____

Describe the types of jobs or occupations impacted: _____

7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? ☐ YES ☐ NO

If YES, explain briefly: _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? \$ _____
 - a. Initial costs for a small business: \$ _____ Annual ongoing costs: \$ _____ Years: _____
 - b. Initial costs for a typical business: \$ _____ Annual ongoing costs: \$ _____ Years: _____
 - c. Initial costs for an individual: \$ _____ Annual ongoing costs: \$ _____ Years: _____
 - d. Describe other economic costs that may occur: _____
2. If multiple industries are impacted, enter the share of total costs for each industry: _____
3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements.
Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted. \$ _____
4. Will this regulation directly impact housing costs? ☐ YES ☐ NO
 If YES, enter the annual dollar cost per housing unit: \$ _____
 Number of units: _____
5. Are there comparable Federal regulations? ☐ YES ☐ NO
 Explain the need for State regulation given the existence or absence of Federal regulations: _____
- Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: \$ _____

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: _____
2. Are the benefits the result of: ☐ specific statutory requirements, or ☐ goals developed by the agency based on broad statutory authority?
 Explain: _____
3. What are the total statewide benefits from this regulation over its lifetime? \$ _____
4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: _____

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: \$ _____ Cost: \$ _____

Alternative 1: Benefit: \$ _____ Cost: \$ _____

Alternative 2: Benefit: \$ _____ Cost: \$ _____

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: _____

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? ☐ YES ☐ NO

Explain: _____

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises **exceed \$10 million**? ☐ YES ☐ NO

***If YES, complete E2. and E3
If NO, skip to E4***

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: _____

Alternative 2: _____

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 1: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

Alternative 2: Total Cost \$ _____ Cost-effectiveness ratio: \$ _____

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding \$50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented?

☐ YES ☒ NO

If YES, agencies are required to submit a [Standardized Regulatory Impact Assessment \(SRIA\)](#) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: _____

The incentive for innovation in products, materials or processes: _____

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency: _____

FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

☐ a. Funding provided in _____
Budget Act of _____ or Chapter _____, Statutes of _____

☐ b. Funding will be requested in the Governor's Budget Act of _____
Fiscal Year: _____

☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

\$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

☐ a. Implements the Federal mandate contained in _____

☐ b. Implements the court mandate set forth by the _____ Court.

Case of: _____ vs. _____

☐ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. _____

Date of Election: _____

☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

☐ e. Will be fully financed from the fees, revenue, etc. from: _____

Authorized by Section: _____ of the _____ Code;

☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

☐ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

☐ 3. Annual Savings. (approximate)

\$ _____

☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

☒ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

☐ 6. Other. Explain _____

**ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)**

STD. 399 (Rev. 10/2019)

FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

It is anticipated that State agencies will:

☐ a. Absorb these additional costs within their existing budgets and resources.

☐ b. Increase the currently authorized budget level for the _____ Fiscal Year

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any State agency or program.

☐ 4. Other. Explain _____

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

\$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

\$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

☐ 4. Other. Explain _____

FISCAL OFFICER SIGNATURE

DocuSigned by:

65589761E2D347D

DATE

1/10/2025

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY

 Bryan Cash

1/13/2025

DATE

1/9/2025

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER



DATE

STD. 399 Addendum

Amend Section 28.30 of Title 14, California Code of Regulations, Regarding Barred Sand Bass Limit

Background

The barred sand bass fishery is an historic recreational fishery in southern California that is open year-round and managed collectively with two other saltwater bass species, kelp bass and spotted sand bass; there is no commercial fishery for barred sand bass. For decades, barred sand bass (*Paralabrax nebulifer*) ranked as one of the most commonly caught and retained marine sport fishes in southern California. From the 1990s through the early 2000s, annual landings exceeding 500,000 barred sand bass was not uncommon from commercial passenger sport fishing vessels (CPFVs). Barred sand bass form large spawning aggregations in the summer months (June through August), and CPFVs and private fishing boats target these aggregations, as this is when the fish are easily found and caught. CPFV landings declined in the late 2000s and have remained under 30,000 landed fish annually since 2016.

In 2013, the California Fish and Game Commission adopted regulations that decreased the bag limit to five in aggregate of the three saltwater bass species (*Paralabrax sp.*) commonly occurring in California, and increased the minimum size limit to 14 inches; however, the stock of barred sand bass has shown little signs of recovery as a result of the changes. The lack of recovery could be due to several factors, including continued fishing pressure during summer months when barred sand bass form spawning aggregations — when the majority of this fishery's activities take place — and intermittent recruitment of young-of-the-year. The currently-proposed regulatory amendments are intended to allow the recovery of barred sand bass by reducing the number of barred sand bass that individual fishers can harvest, with the goal of reducing overall harvest numbers, and by reducing fishing effort during the spawning season when the fish are most susceptible to fishing pressure.

Recreational Fishery Economics Overview

Recreational sand bass fishery activities are comprised of individual angler trips and CPFVs providing boat trips to groups of anglers. Both fishing modes involve travel and other associated expenditures on goods and services. The economic impact of regulatory changes on recreational fisheries is estimated by tracking resulting changes in expenditures corresponding with changes in fishing effort, angler trips, and length of stay in the fishery areas. Distance traveled affects gas and other travel expenditures. Daytrips and overnight trips involve different levels of spending for gas, food, and accommodations at area businesses as well as different levels of sales tax impacts. Direct expenditures ripple through the economy, as receiving businesses buy intermediate goods from suppliers that then spend that revenue again. Business spending on wages is received by workers who then spend that income, some of which goes to local businesses. Recreational fisheries spending thus multiplies throughout the economy with the indirect and induced effects of the initial direct expenditure.

Additionally, if fishing trips shift from months proposed for closure to the remaining open months, and/or shift toward other available species, then the total recreational angler days and associated expenditures could be partially offset; these kinds of shifts have been seen in other fisheries with similar opportunities. A shift toward the remaining open months and/or the pursuit of other species is difficult to estimate due to data limitations, but these responses are expected to partially mitigate the impact of changes in opportunity¹. Thus, due to the likelihood of shifts to other months and available species, the proposed amendments are anticipated to maintain sufficient opportunity to not induce significant adverse economic impact to the state.

Current Regulations

Current regulations governing barred sand bass are:

- Section 28.30 defines a minimum size and a limit (daily bag and possession limit for an individual) for kelp bass, barred sand bass, and spotted sand bass, combined, for recreational fishers. Subsection (a) specifies that the minimum size for the three species is 14 inches total length or 10 inches alternate length. Subsection (b) specifies that the bag and possession limit for sand bass is five in any combination of the three bass species.
- Section 27.65, subsection (b)(1), specifies fillet requirements on fishing vessels for kelp bass, barred sand bass, and spotted sand bass. Each fillet must be a minimum of 7 1/2 inches in length and bear intact a 1-inch square patch of skin.

Proposed Regulations

The proposed regulations would amend subsection 28.30(b) to specify a sub-bag and possession limit for one of the three species within the saltwater bass complex, barred sand bass. The amendment is necessary to reduce overall harvest and protect barred sand bass spawning aggregations that are susceptible to harvest.

The Commission's Marine Resources Committee recommended options for the Commission to consider for amending the bag/possession limit by time of year. Under the proposed regulations, the bag/possession limit would remain five in any combination of the three species, except as provided in a new subsection (c) specific to barred sand bass to create a sub-bag/possession limit:

- Subsection (c)(1) would create a sub-limit within the spawning season (June 1 through August 31) of [0-5] fish, and
- Subsection (c)(2) would create a sub-limit during all other months (September through May) of [1-5] fish.

The square brackets for sub-bag/possession limits indicate a range to be determined by the Commission during the rulemaking process. The addition of subsection (d) establishes a June 1, 2028 sunset date for subsection (c).

¹ Pacific Coast Groundfish Fishery 2023-2024 Harvest Specifications and Management Measures, April 2022, (see pp. 7-3 to 7-5), <https://www.pcouncil.org/documents/2022/03/f-4-attachment-2-2023-2024-management-measure-analytical-document-electronic-only.pdf/>.

Economic Impact Statement

A. *Estimated Private Sector Cost Impacts*

Answer 1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? h. None of the above.

As described in the direct and indirect cost sections, these regulations will not necessarily impose a new cost on fishers and related businesses.

While the potential for a reduction in opportunity for this popular marine fishery could result in reduced sport fishing expenditures in some sectors, these proposed regulations are not expected to reduce opportunities because the Commission is expected to allow some barred sand bass fishing to continue, at the very least outside the spawning season, and because of the substitutability of kelp bass as a targeted species (spotted sand bass does not represent as equal a substitution as kelp bass). A reduction in “opportunity” refers to a reduction in areas open for fishing and may not translate directly to a corresponding reduction in fishing trips. Trips vary by mode and primarily involve private boats or chartered boats, such as CPFVs. Though they are less popular than kelp bass for consumption and sport, barred sand bass are easy for novice anglers to target with hook and line during spawning aggregations; hence, they have been a reliable species for CPFVs hoping to give less experienced anglers a chance to catch a fish (Love et al. 1996a; Erisman et al. 2011).

The proposed regulations introduce a sub-limit of [0-5] fish within the spawning period of June 1-August 31 and a sub-limit of [1-5] within the remaining period of September 1-May 31. However, these sub-limits would not completely close off the barred sand bass recreational fishery and reduce opportunities for fishers, as they would still be able to reach the overall limit of 5 saltwater basses using either barred sand bass, kelp bass, or spotted sand bass. It should be noted that kelp bass represents the most suitable substitute for barred sand bass given their popularity as a sport fish and the areas where they can be fished, while spotted sand bass are primarily found in bays and estuaries that are not typically accessed by CPFVs.

Direct Costs

The proposed regulatory amendment to Section 28.30 will impose some form of sub-limit on barred sand bass. However, kelp bass are still able to be fished and are considered to be appropriate substitute species with little to no difference in bait requirements, and the overall limit for the three saltwater basses in combination remains unchanged.

Indirect Costs

Indirect costs are not expected to be incurred in the adjustment period. Due to the likelihood of timing shifts and shifts to other available species, the proposed amendments are anticipated to maintain sufficient opportunity to not induce significant adverse direct or indirect economic impacts to the state. The shifts will not affect the business decisions of bait sellers who typically sell sardines instead of anchovies, which are the preferred bait for saltwater bass species. Sardines are less costly to procure due

to only requiring a few hours to resupply, versus the nearly 12 hours it takes to resupply anchovies, which gives anchovies a higher total labor cost to procure.

Fiscal Impact Statement

A. Fiscal Effect on Local Government

Answer: 5. No fiscal impact.

The Department anticipates that the proposed regulatory action will have no fiscal effect on any local government entity or program.

B. Fiscal Effect on State Government

Answer: 3. No fiscal impact.

The Department anticipates that the proposed regulatory action will have no fiscal effect on state government. The Commission has determined that the proposed regulatory action will not affect license revenue or the Department's existing level of monitoring and enforcement activities. Additionally, no other state agencies or programs would be affected by this regulatory action.

C. Fiscal Effect on Federal Funding of State Programs

Answer: 3. No fiscal impact.

The proposed regulatory action will not have a fiscal effect on federal funding of state programs.



Adoption: Regulation Change Considerations for Barred Sand Bass



Photo Credit CDFW Staff

17 April 2025

Presented to:
**CA Fish & Game
Commission**

Presented by:
Armand Barilotti
Environmental Scientist
CDFW Marine Region



Where We've Been

February 2024

- CDFW presentation and discussion with fishing industry (remote).
- CDFW presentation and discussion with BSB researchers (remote).

April 2024

- CDFW presentation and discussion with fishing industry (remote).

July 2024

- Marine Resources Committee meeting with CDFW presentation.
- Tribal notification (letter).

September 2024

- BSB Working Group meeting hosted by CDFW with fishing industry, BSB researchers, and FGC staff (hybrid).

October 2024

- BSB Working Group update meeting (remote).

November 2024

- Marine Resources Committee meeting with CDFW presentation.

December 2024

- Fish and Game Commission Notice Hearing with CDFW presentation.

February 2025

- Fish and Game Commission Discussion Hearing.
- Two meetings with industry for research and data needs (Feb. & March).

April 2025

- Fish and Game Commission Adoption Hearing with CDFW presentation.
- Presentation of data discussed highlighting differing opinions.



Data and Research for Barred Sand Bass

- Tagging studies (acoustic and spaghetti tags):
 - 1960s, 1990s, 2013, and 2015
- Larval/juvenile recruitment data
- Availability of prey sources
- Mexican commercial fishery
- CDFW dive surveys 2017-2024
- CDFW discard study 2013-2024
- CPFV Catch per Unit Effort and Landings 1980-2024



Provisional Sunset Regulation Options

BSB bag limit options	% BSB saved*	# BSB saved*
4 June-Aug, 5 Sept-May	3.4%	1,880
4 year-round	3.6%	1,990
3 June-Aug, 5 Sept-May	10.5%	5,836
3 June-Aug, 4 Sept-May	10.7%	5,946
3 year-round	11.2%	6,227
2 June-Aug, 5 Sept-May	21.6%	11,941
2 June-Aug, 4 Sept-May	21.8%	12,051
2 June-Aug, 3 Sept-May	22.3%	12,332
2 year-round	23.5%	13,017
1 June-Aug, 5 Sept-May	38.9%	21,563
1 June-Aug, 4 Sept-May	39.1%	21,673
1 June-Aug, 3 Sept-May	39.6%	21,954
1 June-Aug, 2 Sept-May	40.9%	22,639
1 year-round	44.9%	24,868
0 June-Aug, 5 Sept-May	74.1%	41,075
0 June-Aug, 4 Sept-May	74.3%	41,185
0 June-Aug, 3 Sept-May	74.8%	41,466
0 June-Aug, 2 Sept-May (original proposal)	76.1%	42,151
0 June-Aug, 1 Sept-May	80.1%	44,380

*based on
2023
landings

CDFW MLS 2025



Moving Forward

April 2025

- Fish and Game Commission Adoption hearing with CDFW presentation.
- Adopt new BSB regulation(s).

June 2025

- New regulation implemented with a 3-year sunset date.

Spring/Summer 2025

- Reconvene BSB Working Group with focus on research and data needs for stock assessment and Management Strategy Evaluation (MSE).

2025 - 2028

- Collect data identified for use in the stock assessment and MSE.
- CDFW staff conduct stock assessment & MSE with BSB Working Group.

4 data types identified to collaboratively fill BSB life history gaps or make current data more robust for stock assessment.

- Age structure.
- Maturity and fecundity.
- Release data.
- Movement and migration with natural tagging.

Thank You

Armand Barilotti

Environmental Scientist

Southern California Fisheries Research
and Management Project

Department of Fish and Wildlife
Marine Region

Email: AskMarine@Wildlife.ca.gov

Enhanced Status Report:

<https://marinespecies.wildlife.ca.gov/barred-sand-bass/true/>

Memorandum

Date: April 4, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Pre-adoption Statement of Reasons for the April 16-17, 2025, Fish and Game Commission meeting to Amend Section 28.30 to Title 14, California Code of Regulations, Re: Barred Sand Bass Limit**

Please find attached the Pre-adoption Statement of Reasons to amend Section 28.30, Title 14, California Code of Regulations. The proposed addition aims to limit take and possession of barred sand bass. The options are a range of bag and possession limits of 1-5 barred sand bass and 0-5 barred sand bass during the summer spawning season until June 1, 2028, and as of that date is repealed unless a later enacted amendment deletes or extends that date. Once the final bag and possession limit(s) are determined and adopted at the April 16-17, 2025 meeting the California Department of Fish and Wildlife (Department) requests that the California Fish and Game Commission seek a June 1, 2025, effective date for the regulations. The proposed management measures are necessary to address the lack of recovery in barred sand bass populations, especially during their spawning seasons when they are most susceptible to fishing.

If you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager at R7RegionalMgr@wildlife.ca.gov. The Department point of contact for this regulation should identify Environmental Scientist Armand Barilotti.

ec: **California Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman, D. Env., Region Manager
Marine Region

Kirsten Ramey, Env. Program Manager
Marine Region

Eric Kord, Assistant Chief
Law Enforcement Division

Crystal D'Souza, Attorney
Office of General Counsel

Melissa Miller-Henson, Executive Director
Fish and Game Commission
April 4, 2025
Page 2

Ona Alminas, Env. Program Manager
Regulations Unit
Wildlife and Fisheries Division

Daphne Nandino, Regulatory Scientist
Regulations Unit
Wildlife and Fisheries Division

California Fish and Game Commission

David Thesell, Deputy Executive Director

Susan Ashcraft, Marine Advisor

David Haug, Analyst

State of California
Fish and Game Commission
Pre-Adoption Statement of Reasons for Regulatory Action

Amend Section 28.30
Title 14, California Code of Regulations
Re: Barred Sand Bass Limit

I. Date of Initial Statement of Reasons: December 11, 2024

II. Date of Pre-Adoption Statement of Reasons: March 18, 2025

III. Dates and Locations of Scheduled Hearings

(a) Notice Hearing

Date: December 11, 2024

Location: Sacramento

(b) Discussion Hearing

Date: February 12-13, 2025

Location: Sacramento

(c) Adoption Hearing

Date: April 16-17, 2025

Location: Sacramento

IV. Description of Modification of Originally Proposed Language of Initial Statement of Reasons (ISOR)

As originally stated in the Initial Statement of Reasons (ISOR), the proposed language in Section 28.30 includes a range of options for a sub-bag and possession limit for barred sand bass within the overall five-fish combined limit for kelp bass, barred sand bass and spotted sand bass, to be decided through the Fish and Game Commission (Commission) public noticing process. The options are a range of bag and possession limits of 1-5 barred sand bass and 0-5 barred sand bass during the summer spawning season, with a sunset provision ending June 1, 2028. As stated in the Commission's Marine Resources Committee (MRC) meeting held on November 7, 2024, the Department of Fish and Wildlife (Department) recommends developing an interim regulation of a year-round sub-bag limit of four barred sand bass, with no more than five bass in combination, with a sunset date after three years, while the Department continues to work with stakeholders to fill priority research gaps and develop a long-term conservation strategy based on best available science to protect barred sand bass spawning aggregations

V. Reasons for Modification of Originally Proposed Language of ISOR:

The Commission did not take action upon the proposed regulations during the February Discussion Hearing, therefore, no changes have been made to the originally proposed regulatory language.

VI. Summary of Primary Considerations Raised in Opposition and in Support

Please see Attachment 1, Responses to Public comments received through March 17, 2025.

Updated Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The barred sand bass fishery is a historic recreational fishery in southern California that is open year-round and managed collectively with kelp bass and spotted sand bass. Current regulations include a five-fish bag limit (in any combination of the three species) and a minimum size limit of 14 inches (35.6 centimeters); these were established in 2013 due to concerns about the status of kelp bass and barred sand bass stocks. While no formal stock assessment exists for barred sand bass, abundance estimates, based on fishery independent data, suggest a severely depressed population in southern California. The presumed decline is likely due to a combination of environmental conditions, poor recruitment, and fishing pressure on easily targeted spawning aggregations.

In consultation with fishing industry representatives, fishery researchers, and stakeholders, and with guidance from the Commission's MRC, the Department proposes modifications to Title 14, Section 28.30. Proposed language in 28.30, intended to limit take and possession of barred sand bass, includes a range of options for a sub-bag and possession limit for barred sand bass within the overall five-fish combined limit for kelp bass, barred sand bass and spotted sand bass, to be decided through the Commission public noticing process. The options are a range of bag and possession limits of 1-5 barred sand bass and 0-5 barred sand bass during the summer spawning season, with a sunset provision ending June 1, 2028. This sunset provision allows for conservation of barred sand bass while the Department works with stakeholders on further reviewing data and developing models to evaluate potential future regulations that will help increase and sustain the barred sand bass population and support public fishing opportunities. The proposed regulation amendment is intended to reduce the overall number of barred sand bass taken by the fishery, specifically during the spawning months when barred sand bass are most vulnerable to fishing.

The proposed changes are as follows: Subsection 28.30(b) is proposed to be amended to specify bag limit changes to one species, barred sand bass, within the saltwater bass complex. This amendment is necessary to further protect barred sand bass spawning aggregations.

Add subsection (c)(1) which would create a limit within the spawning season on barred sand bass (June 1 through August 31) and (c)(2) which would create a limit during all other months. The square brackets indicate a range within which a final number will be determined by the Commission. Add subsection (d) which would provide for a sunset provision for subsection (c), repealing it as of June 1, 2028.

The subsections would read as follows:

(c) Barred Sand Bass Limit: Notwithstanding subsection (b);

(1) From June 1-August 31 a maximum of [0-5] barred sand bass may be taken or possessed.

(2) From September 1-May 31 a maximum of [1-5] barred sand bass may be taken or possessed.

(d) Sunset Provision: Subsection (c) shall remain in effect until June 1, 2028, and as of that date is repealed.

Benefit of the Regulations:

The Commission anticipates benefits to the State's environment by sustainably managing California's ocean resources. The barred sand bass population would benefit from reduced fishing effort during

their spawning season when they are most susceptible to fishing, which ultimately supports a more sustainable fishery in the long term. The adoption of scientifically based limits provides for the maintenance of sufficient populations of barred sand bass to ensure their continued existence for the environment and for the businesses that rely on recreational barred sand bass fishing.

Consistency and Compatibility with Existing Regulations:

Article IV, Section 20 of the State Constitution specifies that the Legislature may delegate to the Commission such powers related to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated authority to the Commission to promulgate recreational fishing regulations (Fish and Game Code sections 200 and 205). Commission staff have searched the California Code of Regulations and has found no other state regulations that address the recreational take of barred sand bass. The Commission has reviewed its own regulations and finds that the proposed regulations are consistent with other recreational fishing regulations in Title 14, CCR, and therefore finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulation.

UPDATE

The Commission did not take action upon the proposed regulations during the February Discussion Hearing, therefore, no changes have been made to the originally proposed regulatory language. As stated in the MRC meeting held on November 7, 2024, the Department recommends developing an interim regulation of a year-round bag limit of four barred sand bass, with no more than five bass in combination, with a sunset date after three years, while the Department continues to work with stakeholders to fill priority research gaps and develop a long-term conservation strategy based on best available science to protect barred sand bass spawning aggregations. The Commission will take action on this rulemaking during the April Adoption Hearing.

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Responses to written comments (1-22) received up to March 17, 2025, and to oral comments (23-71) received at the February 13, 2025, Fish and Game Commission meeting.

List of acronyms: BSB = barred sand bass; CPFV = Commercial Passenger Fishing Vessel; CPUE = Catch per unit effort; CRFS = California Recreational Fisheries Survey; Department = California Department of Fish and Wildlife; ESR = Enhanced Status Report; ISOR = Initial Statement of Reasons; MSE = Management Strategy Evaluation; RecFIN = Recreational Fisheries Information Network; SA = stock assessment; summertime – months of June, July, August.

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
1. Rick Maurer, 1/21/2025	<p>1-a. From 50 years of personal diving experience in Santa Monica Bay, no shortage of BSB; observes large school ranging in size from 12-24 inches and larger. BSB are the most prevalent gamefish on artificial reefs.</p> <p>1-b. BSB should not be on the endangered list.</p> <p>1-c. Consider postponing making a regulation change decision until further study.</p>	<p>1-a. Comment noted. Additionally, the Department performs scuba surveys to count and size BSB during the fall months, and two of the sites are within Santa Monica Bay. The results of this ongoing study can be found in the meeting materials from the Marine Resources Committee meetings in July and November 2024 and the Notice hearing in December 2024.</p> <p>1-b. BSB are not endangered nor are they being considered for the endangered species list.</p> <p>1-c. This regulation package is not going to be delayed as the Commission deems there is sufficient information available to make an informed decision about the health of the BSB population and fishery.</p>
2. Tim Carpenter, 1/26/2025	2-a. Opposed to BSB and kelp bass regulation changes being proposed at Discussion Hearing, which should be delayed until the necessary data is	2-a. Please see response 1-c.

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>collected, analyzed, and made available for public review.</p> <p>2-b. Supports all fishing regulations that promote fishery sustainability.</p> <p>2-c. Wants to see the data collected and/or scientific analysis results supporting proposed regulation changes.</p> <p>2-d. Perception of declined catch rates alone does not justify proposed regulation changes.</p> <p>2-e. Many anglers have shifted to other species, leading to the illusion of decline.</p>	<p>2-b. Comment noted.</p> <p>2-c. The BSB fishery data and scientific research used in this regulatory package can be found in the meeting materials from the Marine Resources Committee meetings in July and November 2024 and the Notice hearing in December 2024. More information about BSB can be found in the ESR for BSB on the Department’s website.</p> <p>2-d. Catch rates are just one of the metrics that are used to evaluate the BSB fishery. Fishery-dependent data, fishery-independent data, and analyses published in peer reviewed scientific literature are used to evaluate this fishery. Some examples of these include: CPFV landings, landing estimates from RecFIN, effort, habitat preferences, movements and migrations, age and growth, larvae abundance, juvenile and adult BSB abundance and size distribution, and catch-and-release versus retention rates.</p> <p>2-e. The Commission acknowledges that the offshore fishing for pelagic species like bluefin tuna, yellowfin tuna, dorado, and yellowtail has been exceptional for the past decade; however, the</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>2-f. In 2013 FGC cut the daily bag limits by 50%.</p> <p>2-g. No recent stock assessment has been performed.</p>	<p>southern California short range nearshore CPFVs and private boats are still fishing for BSB and other nearshore species. The nearshore fleet has had to change what nearshore fishes they target because the BSB spawning aggregations have been absent for nearly a decade, so they have been forced to fish for other species to make a catch. In 2023 and 2024, when BSB aggregations were present, the nearshore CPFV fleet focused their effort to target BSB. This leads the Commission to believe that when spawning aggregations of BSB are present, the short range nearshore CPFV fleet and private boats will focus their effort on targeting spawning BSB and will switch to target other species if these BSB spawning aggregations are not present.</p> <p>2-f. Comment noted.</p> <p>2-g. The Commission acknowledges that no formal SA has been done for BSB. The Master Plan for Fisheries describes a scaled management approach that is applied to all fisheries and the overall management framework can range from an ESR to an ESR along with a complex fisheries management plan. BSB are managed with an ESR along with rulemaking on an as-needed basis. Abundance estimates suggest a severely depressed population in southern California. The</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	2-h. CDFW's report fails to acknowledge the migratory nature of the BSB populations.	<p>presumed decline is likely due to a combination of environmental conditions, poor recruitment, and fishing pressure on easily targeted spawning aggregations. The Department is pursuing the idea of a formal SA conducted by Department staff, as well as using an Management Strategy Evaluation (MSE) for testing prospective management options.</p> <p>2-h. The fishing industry has a hypothesis that BSB migrate hundreds of miles from southern and central Baja California, Mexico to southern California to spawn. This hypothesis comes from captains that have seen BSB spawning aggregations and have believed to have seen them migrating up the coast from southern and central Baja California, Mexico. Results from several acoustic and spaghetti tagging studies do not support this hypothesis. The acoustic tagging studies done in the 2010s, have shown BSB have a small home range where they spend most of the year. During the summer months, most of the tagged fish left their section of reef and were detected at local spawning aggregations. This is a migration of 10-30 miles. These BSB were then detected back at their home reefs after the spawning season. In the 1960s and 1990s, over 8,000 spaghetti tags were deployed into BSB. Recaptured spaghetti tagged BSB were either caught where they were initially tagged or at local</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	2-i. Fish counts do not accurately reflect population decline (e.g. many anglers practice catch-and-release of all BSB and KB).	<p>spawning aggregations. The average recapture distance was 18 km (± 15 km) in the 1960s and 7 km (± 9 km) in the 1990s. In the hypothesis from the fishing industry, BSB would be found to be moving among the aggregation sites, resulting in much larger recapture distances. However, this was not documented in these studies, so the Department believes BSB found at southern California spawning aggregations are from locally living BSB. The BSB that likely cross the US/Mexico border are those at the Imperial Beach/Tijuana aggregation site, since the aggregation site is partially in Mexican waters. It is still believed these BSB are sourced from the local area, not from central or southern Baja California, Mexico.</p> <p>The main contribution of Mexican BSB to southern California is thought to be through large sporadic larvae pulses. During warm water years, upwelling in northern Baja California is interrupted, which can allow for BSB larval transport into southern Californian waters.</p> <p>2-i. The Department started a catch-and-release study starting in 2013 after the new regulations were implemented to look at the ratio of released to retained bass, both kelp bass and BSB. The results of this study finds that after the first year after the</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>2-j. Economically and physically disadvantaged anglers will be adversely affected.</p> <p>2-k. BSB serves as an introductory species for new saltwater anglers.</p>	<p>regulation implementation that most basses were released. From 2014 to present about 50% of BSB are released and the other half are kept. This is a stark contrast to kelp bass where about 85% of kelp bass are released and the remaining 15% are kept.</p> <p>The Department also collects data on released fish from the surveys conducted by the California Recreational Fishery Survey (CRFS). Counts and sizes of released fish can be collected by onboard CPFV samplers, while counts of released fish are reported for other fishing modes, such as private/rental boats.</p> <p>2-j. BSB are not the only nearshore species available to CPFVs, private boats, and shore-based fishers to target. Since 2013, BSB have constituted less than 10% of the summertime landings for short range CPFVs, with most years in this range less than 5% of landings. There are a variety of easy to catch nearshore species for everyone to target besides BSB like kelp bass, California scorpionfish (aka sculpin), ocean whitefish, rockfishes, California sheephead, surfperches, croakers, etc.</p> <p>2-k. The Commission acknowledges that BSB is an easier saltwater fish to target for novice anglers. Especially during spawning aggregations, BSB are</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
		voracious and will eat a variety of bait and artificial lure presentations. Part of becoming a responsible angler is learning to practice sustainable fishing practices. The goal of any regulatory package is to make the fishery more sustainable, which will allow for future generations to enjoy the fishery.
3. Chris Arechaederra, Coastal Conservation Association of California, 1/29/2025	<p>3-a. CCA CAL represents the varied interests of CA ocean anglers and believes strong conservation can coexist with responsible, sustainable consumptive outdoor recreation.</p> <p>3-b. CCA CAL leadership has worked with CDFW as a stakeholder for the BSB Working Group.</p> <p>3-c. Catch rates of BSB alone are not sufficient to support a zero take of BSB from June 1 to Aug 31 put forth by some Commissioners at the Dec. 11, 2024, meeting.</p> <p>3-d. Much angling effort has shifted over the past several summers to Southern CA's offshore species. Some CPFVs barely fished for BSB in 2021-2023.</p> <p>3-e. Insufficient data were used to justify the creation of a no-take season.</p> <p>3-f. Catch rates have declined for the past 12 years because of the 2013 bass (BSB, KB, SSB) regulation change.</p>	<p>3-a. Comment noted.</p> <p>3-b. The Commission and Department acknowledge and thank CCA Cal leadership for past and continued partnership in the BSB working group.</p> <p>3-c. See response 2-d.</p> <p>3-d. See response 2-e.</p> <p>3-e. The Department supports the proposed sub-bag limit of 4 BSB; however, the Department has used and presented a multitude of information to evaluate the BSB fishery and there is sufficient information that could support a seasonal closure if the deems it necessary. The information sources used to evaluate this fishery are from fishery-dependent data, fishery-independent data, and analyses published in peer reviewed scientific literature. Some of these include: CPFV landings, landing estimates from RecFIN, effort, habitat preferences, movements and migrations, age and growth, larvae abundance, juvenile and adult BSB</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>3-g. There has been no recent SA for BSB, so the true abundance of BSB is unknown and a maximum sustainable yield cannot be calculated.</p> <p>3-h. CDFW's report fails to adequately acknowledge the migratory nature of BSB populations. BSB will stay in Mexico and not migrate north to spawn if the conditions are unfavorable and the migratory patterns are cyclical.</p> <p>3-i. We need to assess the numbers of BSB that migrate back and forth across the US/Mexico border.</p> <p>3-j. CPFV landings do not accurately reflect age structure and recruitment because juvenile BSB live in areas not fished by CPFVs, which will even actively avoid areas with many sub-legals.</p> <p>3-k. Economically disadvantaged and underprivileged anglers will be disproportionately adversely affected, who often rely on BSB for subsistence; a zero-take season violates the principles of JEDI.</p> <p>3-l. BSB serve as an introductory species for young anglers and a no-take season will deprive many of the opportunity to be introduced to a passion for fishing and love of the ocean.</p> <p>3-m. Dismantling CDFW's recommendations and dismissing the working group's input discourages</p>	<p>abundance and size distribution, and catch-and-release versus retention rates.</p> <p>3-f. This statement is incorrect based off the CPFV logbook landings and RecFIN landing estimates. The decline in landings and CPUE started in 2005, not 2013, and bottomed out in 2016. Spawning aggregations disappearing from southern California was the key reason why BSB landings declined. The Commission does acknowledge that the regulations implemented in 2013 may have contributed to the continued decline in landings since the bag limit was reduced by half and the size limit was increased by 2 inches.</p> <p>3-g. See response 2-g.</p> <p>3-h. See response 2-h.</p> <p>3-i. The Department is going to be working with the BSB working group to determine which scientific studies can be accomplished before this regulation sunsets in 2028. One of the studies being considered is a natural tagging study that uses the microchemistry of the BSB otoliths to determine where they have lived and traveled.</p> <p>3-j. Comment acknowledged that CPFVs do not fish in the habitat where BSB recruit.</p> <p>3-k. See response 2-j.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	future collaboration with stakeholders to reach agreement on issues.	3-l. See response 2-k. 3-m. Comment noted.
4. Bekki Vanderelst, Dana Wharf Lady Anglers, 1/29/2025	<p>4-a. Opposed to establishing a no take season for BSB from June 1 to Aug 31.</p> <p>4-b. Catch rates alone should not be used as a definitive indicator of population health.</p> <p>4-c. Many have shifted effort focus to other species.</p> <p>4-d. There has been no recent, comprehensive stock assessment.</p> <p>4-e. The Department has failed to acknowledge the migratory behavior of barred sand bass.</p> <p>4-f. A no take season would disproportionately affect disadvantaged and underprivileged anglers and tribal communities.</p> <p>4-g. Collaboration between the Department and stakeholders can lead to more balanced and effective conservation solutions.</p>	<p>4-a. Comment noted.</p> <p>4-b. See response 2-d.</p> <p>4-c. See response 2-e.</p> <p>4-d. See response 2-g.</p> <p>4-e. See response 2-h.</p> <p>4-f. See response 2-j.</p> <p>4-g. Comment noted.</p>
5. Laurie Davies, Assemblywoman, 74th District, 1/30/2025	<p>5-a. Strongly opposed to any new restrictions on BSB fishing.</p> <p>5-b. California's sport fishing industry is a major economic driver, job creator, and essential contributor; the coastal cities in her district (Dana Point, San Clemente, Oceanside, and others),</p>	<p>5-a. Comment noted.</p> <p>5-b. The Commission acknowledges the importance of the sportfishing industry to the southern California economy. The BSB fishery is no longer the primary target of the southern Californian short range nearshore CPFV fleet, and</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>charter boat operators, tackle shops, and hospitality businesses all heavily rely on tourism, small business revenue, and local job creation sportfishing provides; any new restrictions to BSB fishing will harm the local economy and fishing community in her district.</p> <p>5-c. Current regulations are effective; there are no proven conservation benefits to be gained from new restrictions.</p>	<p>conservation measures used to restrict the amount of BSB take should have minimal financial impacts to the CPFVs and sportfishing landings. In the 1990s and early 2000s, BSB made up 50% or more of the summertime landings of short range nearshore CPFVs in southern California; however, the summertime landings of BSB in the past decade have been a fraction of the historic landings. From 2014-2022 BSB made up less than 5% of the total summertime landings for the short range nearshore CPFV trips in southern California. This is a result of the disappearance of the BSB spawning aggregations in southern California. To stay in business and offer fishers productive fishing trips for the past decade, CPFVs and their sportfishing landings have had to target other species like: California scorpionfish (aka sculpin), rockfish, kelp bass, ocean whitefish, and other nearshore species. Furthermore, a switch from BSB to other species is unlikely to have spillover indirect economic impacts on the bait suppliers in the area, as the primary bait for BSB are anchovies, while many suppliers primarily carry sardines for its use as a multispecies baitfish; therefore, bait suppliers are unlikely to see any costs for transitioning to an alternative bait species as they are already doing that.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
		5-c. Comment noted.
6. Jaime Diamond, Stardust Sportfishing, 1/30/2025	<p>6-a. Owner of Stardust Sportfishing in Santa Barbara, thanks the Department for hosting the working group and all who participated, the process can serve as an excellent template for future collaborative fisheries management.</p> <p>6-b. Reports consensus at the 2024 BSB Working Group that collecting data for a formal SA must be the highest priority; lists types of data that should be collected for the SA, including those that align with priorities listed in the BSB ESR.</p> <p>6-c. Industry highlighted research into transboundary movements (across US/Mexico border) as a priority.</p> <p>6-d. Industry highlighted research into refining recruitment estimation methods.</p> <p>6-e. Industry highlighted the need to evaluate impacts of recent management changes (2013).</p> <p>6-f. Expressed concerns regarding the misrepresentation of population trends due to shifting effort and climate change; expressed concerns over the presentation of data without context.</p>	<p>6-a. The Commission and Department acknowledge and thank Stardust Sportfishing for past and continued partnership in the BSB working group.</p> <p>6-b. There was consensus among the CPFV fleet/angling representatives that a formal SA must be the highest priority. The Department is pursuing the idea of a stock assessment conducted by CDFW staff, as well as using a MSE for testing prospective management options.</p> <p>6-c. See response 3-i.</p> <p>6-d. The Department is going to be working with the BSB working group to determine which scientific studies can be accomplished before and after this regulation sunsets in 2028.</p> <p>6-e. The Department continually analyzes both fishery-dependent and fishery-independent data for the BSB fishery, while always considering other factors that may influence management changes. To read more about the BSB fishery and impacts of regulations please read the BSB ESR and the ISOR associated with this regulatory package.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>6-g. Growth slows significantly from 12-14 inches which allows for extra years of spawning to occur and does not believe this was reflected in information provided by the Department.</p> <p>6-h Regulatory changes could negatively impact coastal communities and disadvantaged anglers; fishing provides a vital food source for many recreational anglers.</p> <p>6-i. Charter fleet continues to offer assistance for collaborative sampling; will take time to collect and analyze needed information but is essential for sound management and creating a clear roadmap showing how proposed changes will address assumed problems through science; looks forward to working together.</p>	<p>6-f. See response 2-e.</p> <p>6-g. The Department does incorporate this growth rate information (described in Walker et al. 2020; see BSB ESR for full citation) in analyses.</p> <p>6-h. See response 2-j.</p> <p>6-i. Comment noted. Additionally, the Commission and Department appreciate the offer of continued engagement moving forward. The Department has been in discussions with the charter and private fleets regarding different options for collaborative sampling efforts which include customized catch card technology used in other states.</p>
<p>7. Robert Falcone, Point Loma Sportfishing, 1/30/2025</p>	<p>7-a. Point Loma Sportfishing Association of San Diego has been in San Diego Bay for 78 years providing fishing trips ranging from ½ day to 16 days and ½ day trips especially important for introducing new anglers to the sport.</p> <p>7-b. BSB are a vital part of the Southern California fishery and if the goal is to increase fishing opportunities in the long run it would be counterproductive to enforce regulations so restrictive they force businesses to close and would</p>	<p>7-a. Comment noted.</p> <p>7-b. See response 5-b.</p> <p>7-c. Comment noted.</p> <p>7-d. See response 5-b.</p> <p>7-e. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>precipitate a severe economic downturn for the local CPFV fleet.</p> <p>7-c. The following factors should be thoroughly studied before any decisions about regulations are made: BSB migration across the border should be studied in collaboration with the Mexican government and universities, study the behavior, spatial distribution, and population dynamics of juvenile BSB in local coastal waters, assess whether reducing current catch levels will influence future local fish stock, exploration of existing data sets that assess local BSB recruitment strength at smaller sizes.</p> <p>7-d. Consider the broader impact of these changes on the sportfishing fleet and the preservation of recreational fishing access because we are already facing hardships from economic downturns, escalating fuel prices, fishing area closures, establishment of MPAs, seasonal closures, depth limitations on bottom fishing, increasingly stringent regulations of key species such as kelp bass and BSB that have already adversely affected local sportfishing businesses, the vermilion rockfish daily sub-limit, other contributing factors such as water pollution and weather.</p>	

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	7-e. Gratitude expressed for the work of the Department and looking forward to working together to find a solution.	
8. Mike Harkins, CPFV Captain, 1/30/2025	<p>8-a. Has worked on local sportboats in Newport Beach for 15 years, currently main operator of the Western Pride (1/2 day boat), and grown up on the ocean; is a firsthand witness to annual changes in the fishery based on several factors; coastal fishing makes up 95% of our business.</p> <p>8-b. BSB are a key species for beginners and recreational anglers; BSB has been and continues to be one of our main staples.</p> <p>8-c. BSB are not in decline or in need of drastic action; natural population fluctuations are due to environmental factors affecting their migratory movements; current regulations are sustainable.</p> <p>8-d. These new regulations would negatively affect sportfishing businesses, captains, and the next generation of anglers.</p> <p>8-e. Supports using regulations for conservation, but the proposed restrictions are damaging and unwarranted.</p>	<p>8-a. Comment noted.</p> <p>8-b. See response 2-k.</p> <p>8-c. The Department is concerned that the population has been depressed and is just starting to show signs of improvement. Abundance estimates suggest a severely depressed population in southern California. The presumed decline is likely due to a combination of environmental conditions, poor recruitment, and fishing pressure on easily targeted spawning aggregations. In the mid-2010s, southern California had a large recruitment pulse of BSB larvae, and these fish have become old enough to enter the fishery around 2023/2024. This pulse of BSB have started to form spawning aggregations, which had been missing for nearly a decade. The Department's scuba surveys do not indicate another large recruitment pulse in the years following the mid-2010s recruitment pulse, as referenced in the ISOR and other presentations. These spawning fish represent the possibility of more locally sourced larvae, which will help rebuild the BSB fishery. Increased fishing of BSB spawning aggregations</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
		<p>could undo the progress of this rebuilding fishery. The proposed regulations are in response to the Department's concern with the sustainability of this fishery.</p> <p>8-d. See response 5-b.</p> <p>8-e. Comment noted.</p>
<p>9. Donna Kalez, Dana Wharf Sportfishing and Whaler Watching, 1/30/2025</p>	<p>9-a. Part owner and operator of Dana Wharf Sportfishing and Whale Watching, a family business that has been operating in Dana Point Harbor since 1971; emphasizes the importance of their business to the local fishing industry and the importance of BSB fishing to the diverse community of anglers.</p> <p>9-b. The 2013 regulation changes significantly impacted our business and customers; additional regulations on BSB fishing would negatively impact small businesses, captains, and crew members who rely on the industry.</p> <p>9-c. Many anglers, including families and those with limited budgets, depend on local fishing trips for affordable fishing opportunities and these proposed regulations represent a targeted attack on fishing access.</p> <p>9-d. Our customers do not pose a risk to the BSB population; The 2013 regulations, including the 14-</p>	<p>9-a. Comment noted.</p> <p>9-b. See response 5-b.</p> <p>9-c. See response 2-j.</p> <p>9-d. See response 8-c.</p> <p>9-e. See response 2-e.</p> <p>9-f. See response 1-c and 2-g.</p> <p>9-g. See response 2-i.</p> <p>9-h. See response 2-h.</p> <p>9-i. See response 8-c.</p> <p>9-j. The Commission and Department acknowledge and thank them for their support for the Department's recommendation.</p> <p>9-k. Comment noted.</p> <p>9-l. Comment noted.</p> <p>9-m. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>inch size limit, have already contributed to sand bass conservation and will continue to do so.</p> <p>9-e. Post 2013 BSB catch declines are due to effort shifts to other species, not because fish are gone.</p> <p>9-f. There is no current stock assessment; a fisheries management plan is needed before imposing further restrictions.</p> <p>9-g. Scientists are only using catch reports for legal fish landed and do not capture stats regarding released fish, effort shifts, and the sheer volume of fish seen but not caught.</p> <p>9-h. BSB are migratory, and their movement patterns complicate population estimates and conservation measures.</p> <p>9-i. The 2023-2024 rise in BSB numbers suggests the species is not in decline.</p> <p>9-j. Instead of closures, a reduction in the bag limit to four fish is a more reasonable solution during a subset period of 3 years, while scientific research is prioritized to determine if a change in the bag limit is warranted, and economic impacts are weighed.</p> <p>9-k. Other environmental factors such as water pollution, sea lion predation, and climate conditions also impact BSB populations.</p>	

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>9-l. The sportfishing fleet is willing to assist the Department with data collection to support conservation efforts.</p> <p>9-m. Thanks the Department and places trust in the Department to make decisions that balance environmental needs with recreational angler enjoyment and that listen to everyone's voices.</p>	
<p>10. Steve Knoblock, City of San Clemente Mayor, 1/30/2025</p>	<p>10-a. The city of San Clemente strongly urges additional scientific studies be conducted, including assessing the current status of the population, before making significant regulatory changes to BSB management.</p> <p>10-b. Anglers report increased juvenile and adult BSB interactions, especially releases, indicating that previous regulations (reduced bag limits and increased size limits) have been effective.</p> <p>10-c. All the various fishing groups (piers, kayaks, small boats, commercial boats) that will be affected should be consulted, ensuring their input along with scientific data is considered.</p> <p>10-d. The city supports a temporary bag limit reduction while research is conducted to assess the health of the fish stock.</p>	<p>10-a. See comment 1-c.</p> <p>10-b. See responses 2-i and 8-c.</p> <p>10-c. See response 2-j. A BSB working group that included the various fishing groups, BSB researchers, and CDFW staff was formed for this purpose. A timetable of these and other outreach efforts to these groups was presented at the December 2024 Commission Discussion meeting.</p> <p>10-d. The Commission and Department acknowledge and thank them for their support for the Department's recommendation.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
<p>11. Frank LoPreste, Landing/CPFV Owner/Captain, 1/30/2025</p>	<p>11-a. Has many years of experience in the fishing industry: captain for over 60 years, owns three landings, and is part owner of many CPFVs.</p> <p>11-b. The BSB biomass moves between Baja Mexico and Southern California. BSB can be resident in some areas but also migrate based on food, water quality, and temperature.</p> <p>11-c. The 2013 bass regulation changes have improved stock levels, which ensures sustainability without needing stricter restrictions; there is no crisis. The fleet and public report seeing many large and even more small BSB.</p> <p>11-d. Comprehensive program for measuring and tagging released fish is needed.</p> <p>11-e. Communication between CDFW and mariners should be improved for a more comprehensive data picture; make sure to consult anglers from all areas/access types, including public piers, breakwaters, docks, small boats, and shore.</p> <p>11-f. Restrictions would disproportionately impact disadvantaged shore anglers.</p> <p>11-g. Supports reducing the bag limit to four fish while working with the fishing community to gather more data.</p>	<p>11-a. Comment noted.</p> <p>11-b. See response 2-h.</p> <p>11-c. See response 8-c.</p> <p>11-d. The Department has an ongoing study the counts and measures released and retained bass aboard CPFVs. This information, along with similar data collected by CRFS, are used in BSB management. Please also see response 3-i.</p> <p>11-e. See response 10-c.</p> <p>11-f. See response 2-j.</p> <p>11-g. The Commission and Department acknowledge and thank them for their support for the Department's recommendation.</p> <p>11-h. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	11-h. Conduct a full stock assessment and then revisit potentially implementing any further restrictions.	
12. Sharif Mohamed, CPFV Captain, 1/30/2025	<p>12-a. Is a USCG Captain with 27 years of experience operating sportfishing boats in Newport Beach; operates CPFVs and also his own recreational boat.</p> <p>12-b. Has observed BSB populations firsthand and acknowledges a decline over time but also notes a resurgence in 2023.</p> <p>12-c. Highlights significant urban runoff pollution from the Los Angeles and Santa Ana Rivers and asks what is being done to reduce ocean pollution.</p> <p>12-d. Does not think local recreational anglers are having an impact on BSB; asks what data shows fishermen are suddenly impacting BSB populations; feels there is a larger oceanic cycle affecting BSB that we cannot measure through history and change.</p> <p>12-e. Restricting catch during peak season will harm recreational anglers, sportfishing operators, and summer passenger loads; will not be able to operate twilight runs.</p>	<p>12-a. Comment noted.</p> <p>12-b. Comment noted.</p> <p>12-c. While the Commission and Department acknowledge the significant impacts of pollution on the BSB resource and take them into consideration, reducing ocean pollution is not within the purview of the Commission or Department.</p> <p>12-d. See response 8-c.</p> <p>12-e. See response 5-b.</p> <p>12-f. Comment noted. The Department plans to increase the efforts to be in contact with researchers and management in Mexico regarding sampling efforts to fill data gaps. BSB are primarily taken in a commercial trap fishery in Baja California Sur. The Commission is not aware of Mexico implementing similar conservation measures. Fishing industry and a non-governmental organization in Mexico are working on a BSB fishery improvement program with the main objective of achieving a sustainable fishery to</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>12-f. Calls for increased collaboration with Mexico on BSB management and asks if Mexico is implementing similar conservation measures.</p> <p>12-g. Does not believe an aggressive change in regulations will help; advocates for delaying new regulations for 3-5 years to allow for further research and collaboration with Mexico.</p> <p>12-h. Expresses respect for the Department but calls for a compromise that will work for all stakeholders.</p>	<p>ultimately obtain a Marine Stewardship Council certification.</p> <p>12-g. See response 1-c.</p> <p>12-h. Comment noted.</p>
<p>13. Rick Oefinger, Marina Del Rey Sportfishing, 1/30/2025</p>	<p>13-a. Entire career has been in the CPFV business, starting in 1970 and primarily in Santa Monica Bay; has been the president of Marine del Rey Sportfishing, Inc. since 1995.</p> <p>13-b. Expresses skepticism over the urgency of proposed restrictions, arguing that BSB are not in immediate danger; suggests calls for emergency zero take are driven by few misguided individuals with an agenda.</p> <p>13-c. Advocates for collecting thorough and objective data before making major management decisions. Believes BSB populations are stable and drastic action is unnecessary at this time.</p> <p>13-d. Supports the Department's proposal for a 36-month sand bass study.</p>	<p>13-a. Comment noted.</p> <p>13-b. See response 8-c.</p> <p>13-c. See response 1-c.</p> <p>13-d. The proposed regulation will sunset after three years, but there is no specific 36 month BSB study. During this time the Department will work with the BSB working group to address information gaps. See responses 3-i and 6-d.</p> <p>13-e. Support for the Department's recommendation is noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	13-e. Agrees with a 25% reduction in allowable take (reducing bag limit to 4 fish of 14 inches or longer per person, per day) as a temporary measure during the study period.	
14. Larry Phillips, American Sportfishing Association, 1/30/2025	<p>14-a. Expresses thanks for the opportunity to comment and is commenting on behalf of the American Sportfishing Association.</p> <p>14-b. Recreational fishing contributes \$6.2 billion annually to California’s economy and supports 43,000 jobs; over 50,000 BSB were harvested in 2023, suggesting significant economic benefits.</p> <p>14-c. Catch rates alone are not a reliable measure of decline; other factors such as effort shifts must be considered.</p> <p>14-d. A comprehensive stock assessment is needed before imposing further restrictions because management decisions should be based on accurate population data rather than indirect indicators, like catch rates.</p> <p>14-e. BSB moves between California and Mexico, so their movements and migrations patterns should be studied before making significant regulation changes.</p> <p>14-f. Restricting access may disproportionately affect disadvantaged and tribal communities.</p>	<p>14-a. Comment noted.</p> <p>14-b. Comment noted.</p> <p>14-c. See response 2-d.</p> <p>14-d. See responses 1-c and 2-g.</p> <p>14-e. See response 2-h.</p> <p>14-f. See response 2-j. Tribal outreach was conducted and there was no concern with proposed regulation changes to limit take of BSB.</p> <p>14-g. See response 2-k.</p> <p>14-h. The Department agrees with this comment. See comment 8-c.</p> <p>14-i. This is not an emergency regulation package.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>14-g. BSB are a key species for beginner anglers, and further restrictions could discourage the development of long-term engagement in fishing and reduce fishing license sales.</p> <p>14-h. The current size limit protects spawning fish sizes 10-14 inches and supports sustainability.</p> <p>14-i. ASA opposes emergency closures like zero-take regulations.</p>	
<p>15. Mark Pisano, 22nd Street Sportfishing Landing, 1/30/2025</p>	<p>15-a. Writing to express concerns regarding increased regulations on BSB on behalf of 22nd St. Landing Sportfishing and the Los Angeles County Sportfishing fleet.</p> <p>15-b. BSB is vital to recreational fishing and supports vessel owners, crew, and local communities, as well as inspiring lifelong passions for sportfishing.</p> <p>15-c. Customer participation has declined since the 2013 bass regulation change.</p> <p>15-d. Entry-level anglers, especially low-income families, rely on BSB fishing for recreation and food; further restrictions would disproportionately impact over 60% of entry-level anglers.</p> <p>15-e. Current groundfish limits on depth, bag size, and season length are reducing angler</p>	<p>15-a. Comment noted.</p> <p>15-b. Comment noted.</p> <p>15-c. The CPFV logbook data records BSB landings and number of fishers aboard each trip. These logs show a precipitous drop in number of fishers aboard CPFVs that retained at least BSB per trip starting in the mid-2000s, about a decade before the 2013 regulation was enacted. The Commission acknowledges that this regulation may not have helped participation in the BSB fishery; however, the absence of BSB spawning aggregations is the more likely culprit for dissuading fishers to choose CPFV trips targeting BSB.</p> <p>15-d. See response 2-j.</p> <p>15-e. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>participation, causing frustration, and exacerbating the fishing industry's financial challenges.</p> <p>15-f. Regulations must align with scientific data and fishermen's observations.</p> <p>15-g. BSB lacks a comprehensive stock assessment, which makes establishing a fisheries management plan necessary; advocates for a stock assessment which is needed to set clear conservation goals for BSB.</p> <p>15-h. Advocates for a temporary reduction in BSB retention while addressing data gaps identified by the Department.</p>	<p>15-f. Comment noted.</p> <p>15-g. See response 2-g.</p> <p>15-h. Support for the Department's recommendation is noted.</p>
16. Esther Sanchez, City of Oceanside Mayor, 1/30/2025	<p>16-a. BSB fishing is crucial for recreational anglers in Oceanside and a zero-bag limit would especially hurt low-income and subsistence fishers.</p> <p>16-b. Advocates for more data collection before implementing regulatory changes, emphasizing that accurate, up-to-date data be used to assess the current status of BSB populations.</p> <p>16-c. Recent observations from the angling community report increased juvenile and adult BSB interactions, especially releases, indicating that previous 2013 regulation changes have been effective.</p>	<p>16-a. See response 2-j.</p> <p>16-b. See response 1-c.</p> <p>16-c. See response 8-c.</p> <p>16-d. Comment noted and see response 10-c. Outreach efforts have been ongoing with commercial and private fishing fleets.</p> <p>16-e. Support for the Department's recommendation is noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>16-d. Requests that all impacted groups, including pier, breakwater, kayak, CPFV, and small boat anglers, be consulted.</p> <p>16-e. Supports a temporary reduction of the bag limit while further research is conducted to assess health of the BSB stock.</p>	
17. Chugey Sepulveda, Pfleger Institute of Environmental Research, 1/30/2025	<p>17-a. The BSB fishery lacks a formal stock assessment or Fishery Management Plan despite its significance.</p> <p>17-b. The 2013 bass regulatory changes protect the spawning stock, but the full benefits may not yet be realized; despite recent increases in the number and size of BSB landed, industry, researchers, and state managers all recognize the need to address existing data gaps and improve our capacity to manage the southern CA BSB fishery.</p> <p>17-c. In alignment with Section 5.1 of the BSB Enhanced Status Report and discussions during the 2024 BSB Working Group, key areas needing research include: better understanding of BSB stock structure, understanding effects of Mexico's BSB contributions, improving length-frequency data from retained and released catch (US and Mexico), improving mortality estimates (US and Mexico;</p>	<p>17-a. See response 2-g.</p> <p>17-b. Comment noted.</p> <p>17-c. See response 6-d.</p> <p>17-d. Comment noted.</p> <p>17-e. See response 3-i.</p> <p>17-f. Comment noted.</p> <p>17-g. See comment 5-b.</p> <p>17-h. Comment noted.</p> <p>17-i. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>natural, fishing, and post-release), and improving recruitment estimation methods.</p> <p>17-d. A better understanding of the above-mentioned research areas will improve our capacity to manage this valuable bi-national resource and help us understand the fluctuations in BSB abundance that have been characteristic of this fishery since the 1950's.</p> <p>17-e. Unclear stock boundaries due to transboundary movement with Mexico hinder effective management. Previous tagging studies on BSB were not designed to assess stock structure, so a comprehensive transboundary tagging study is needed for the following reasons: prior tagging studies were incomplete and lacking a tag recapture program in Mexico, conducted before the introduction of trapping and the widespread targeting of BSB in Mexico, and tagging efforts did not encompass the entire species range (south of US/Mexico border).</p> <p>17-f. With changing environmental conditions, tagging studies should be periodically revisited to understand if movements or distributions have changed over time; several studies are cited referencing ways in which water temperature and other environmentally driven factors affect</p>	

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>recruitment dynamics and reproductive capacity which lead to fluctuations in BSB abundance.</p> <p>17-g. Considering recent information on the lack of a local spawner-recruit relationship, a full summer closure may not effectively rebuild local BSB stocks and could severely harm the recreational fishing industry.</p> <p>17-h. Instead of a full summer closure, recommends a three year research period using industry participation to help collect and fill important data gaps as an effective way to move forward.</p> <p>17-i. Provides a Literature Cited List.</p>	
18. Wendy Tochihara, 1/30/2025	<p>18-a. The writer of this letter represents the 422 signers and opposes closing BSB fishing during the summer months.</p> <p>18-b. Closing BSB fishing during summer months is an extreme and unreasonable response that primarily supports the popular narrative of the scientific community that any fishing during spawning is bad, but we disagree.</p> <p>18-c. BSB are important to recreational anglers, children, veterans, and especially those with less disposable income; many pier and jetty anglers</p>	<p>18-a. Comment noted.</p> <p>18-b. Comment noted.</p> <p>18-c. See response 2-j.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	depend on BSB catch for sustenance; BSB are a highly prized catch.	
19. Joe Villareal, Mirage Sportfishing, 1/30/2025	<p>19-a. Represents a CPFV that has over 30 years in this fishery and has a life of fishing in the Southern California Bight.</p> <p>19-b. BSB is a critical species for the industry's economic survival; continued allowable catch of BSB is necessary to sustain business operations.</p> <p>19-c. Supports a 4-fish bag limit for three years to allow further study.</p> <p>19-d. Argues existing science/surveys are flawed and need improvement via collaboration between the Department and industry to develop a better stock assessment.</p> <p>19-e. Believes current regulations and MPAs have already ensured sustainability and we are creating a problem that is not there urges against a "kneejerk reaction" that could harm an already struggling industry.</p>	<p>19-a. Comment noted.</p> <p>19-b. See response 5-b.</p> <p>19-c. Support for the Department's recommendation is noted.</p> <p>19-d. See response 2-g.</p> <p>19-e. See response 8-c.</p>
20. William Wilkerson, B&M Sportfishing, 1/30/2025	<p>20-a. Requests postponing BSB regulatory decisions until proper research is conducted to address the critical uncertainties.</p> <p>20-b. BSB plays a critical role in the recreational fishing industry, especially for economically</p>	<p>20-a. See response 1-c.</p> <p>20-b. See response 2-j.</p> <p>20-c. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>constrained anglers and small, family-owned party-boat operations, like his own (owns a ½ day and ¾ day fishing business in San Diego).</p> <p>20-c. Urges decision-makers to consider his recommendations to ensure a balanced approach that prioritizes both conservation and economic sustainability.</p> <p>20-d. Scientific research priorities should include: targeted research to address data gaps regarding BSB population dynamics, collaboration with Mexico to study seasonal migrations influenced by water temperature, research on juvenile populations (behavior, location, abundance) possibly through a tag and release program for short BSB, and the calculation of a maximum sustainable yield.</p> <p>20-e. Suggests the following management and conservation measures: temporary bag limit reduction to four fish, maintain existing size limit for spawning protection, and implement a total allowable catch system.</p> <p>20-f. Highlights the importance of BSB for shore and pier anglers and small family-owned businesses, warning of potential economic harm from overly restrictive measures.</p>	<p>20-d. See comment 6-d.</p> <p>20-e. Support for the Department's recommendation is noted. Other conservation measures will be evaluated with the BSB Working Group in the coming years.</p> <p>20-f. See response 5-b.</p> <p>20-g. See response 6-d.</p> <p>20-h. See response 3-i.</p> <p>20-i. The Department disagrees with this statement. Southern California is part of the core range for BSB. Please see BSB Enhanced Status Report for more information and citations.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>20-g. Lists key research questions to be answered including questions about: future abundance effects of reducing catch limits now, the role of fishing pressure vs environmental factors on fluctuation of BSB catches, high-abundance years possibly being a result of adult BSB migrations into CA, how dependent local BSB populations are on immigration from Baja CA, and which environmental factors constrain CA BSB catches and by how much.</p> <p>20-h. Sportfishing industry supports U.S.-Mexico collaboration on BSB migration research; existing data sets on local BSB recruitment should be analyzed for additional insights.</p> <p>20-i. Notes how Southern CA is at the northern edge of the BSB range, with thriving populations in Baja CA.</p>	
21. John Yamate, Seaforth Sportfishing, 1/30/2025	<p>21-a. Is part owner and general manager of Seaforth Sportfishing on Mission Bay in San Diego; describes his long history and experience fishing in San Diego.</p> <p>21-b. BSB is a key species for local fishing trips (half-day, three-quarter-day, twilight), which provides an affordable and family-friendly alternative to longer multi-day fishing trips; the 2013 bass regulation changes already impacted</p>	<p>21-a. Comment noted.</p> <p>21-b. See response 5-b.</p> <p>21-c. Support for the Department's recommendation is noted.</p> <p>21-d. See response 1-c.</p> <p>21-e. See response 6-d.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>the industry; further bag limit reductions or seasonal restrictions would be detrimental.</p> <p>21-c. If changes must occur, prefers a four-fish limit with the current minimum size limit.</p> <p>21-d. Advocates for completion of a stock assessment and studies on both adult juvenile BSB before any regulatory changes are made.</p> <p>21-e. Encourages any studies to include BSB populations in northern Baja, as they are probably linked to Southern CA spawning aggregations.</p>	
22. David Choate, 1/31/2025	<p>22-a. Deeply concerned about the potential establishment of a no-take season for BSB from June 1 to August 31; believes decision to suggest a no-take season lacks sufficient scientific basis and fails to consider the ecological, social, and economic implications; respectfully urges the Commission to avoid a no-take season for BSB.</p> <p>22-b. Catch rates are not a reliable indicator of population decline; anglers and sportfishing operators have shifted focus to other species like bluefin tuna, which may create a false perception of declining BSB populations.</p> <p>22-c. There is no comprehensive, updated stock assessment to justify a no-take season.</p>	<p>22-a. Comment noted.</p> <p>22-b. See response 2-d.</p> <p>22-c. See response 2-g.</p> <p>22-d. See response 2-h.</p> <p>22-e. See response 2-j.</p> <p>22-f. See response 2-k.</p> <p>22-g. See response 5-b.</p> <p>22-h. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>22-d. Migratory behavior is not considered; BSB move between different habitats and regions making localized data potentially misleading.</p> <p>22-e. A no-take season would disproportionately negatively affect disadvantaged and underprivileged anglers, including tribal communities; these groups rely on nearshore BSB fishing for accessibility and subsistence.</p> <p>22-f. BSB is a ‘gateway fish’, helping to introduce new anglers to fishing and fostering long-term engagement; eliminating access could harm recruitment efforts and fishing license sales, impairing the success of the Department’s 3Rs program (Recruit, Retain, Reactivate).</p> <p>22-g. The industry contributes billions to California’s economy; a no-take season could have cascading negative effects, harming tackle shops, charter businesses, and tourism.</p> <p>22-h. Urges the Department to prioritize updated research and collaboration with stakeholders before establishing a no-take for BSB; a balanced approach is needed to ensure sustainable management without unnecessary restrictions.</p>	

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
23. Tonie Bangos, Coastal Conservation Association of California, 2/13/2025	<p>23-a. California species are subject to oceanographic conditions. There is a correlation between the availability of anchovies and barred sand bass (BSB) catch rates.</p> <p>23-b. Lack of funding is the response to lack of data or stock assessment. We want to protect stocks without doing unnecessary harm to anglers. Hear from CPFV captains and the anglers. The fishery community needs to be included in policy discussions.</p>	<p>23-a. While anchovies are a forage fish for BSB, there are no peer reviewed scientific journal articles that support this correlation. In the SA for northern anchovy, “Assessment of the northern anchovy (<i>Engraulis mordax</i>) central subpopulation in 2021 for US management”, Kuriyama et al. 2022, there has been a large annual biomass of young-of-year anchovy present in southern California since 2016; however, 2014-2022 BSB landings from CPFVs were the lowest ever recorded. If these two stocks were correlated, then the Department would have expected to see higher landings and abundance of BSB during these years.</p> <p>23-b. Comment noted and see response 10-c.</p>
24. Donna Kalez, Dana Wharf Sportfishing owner, 2/13/2025	<p>24-a. The proposed BSB regulation changes should only be reduced by 1 fish or remain the same at 5 while more science is conducted.</p> <p>24-b. There are so many small fish that we’re not reporting, and that we can’t show you, unless you’re on the water.</p> <p>24-c. Any reduction in the bag limit will impact her business.</p>	<p>24-a. Support for the Department's recommendation is noted.</p> <p>24-b. See response 2-i.</p> <p>24.c. See response 2-j.</p>
25. Brian Woolley, Dana Wharf	25-a. Captain with 28 years of experience with 200 days on the water per year.	<p>25-a. Comment noted.</p> <p>25-b. See response 8-c.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
Sportfishing captain, 2/13/2025	25-b. Has seen a considerable rise in sub 14 inch sand bass caught from his vessel and more common to catch and release small BSB than legal sized BSB. This shows there is no shortage of juvenile BSB. Also, these fish do not have hook trauma showing they are not repetitively catching the same fish.	
26. Ken Franke, Sport Fishing Association of California, 2/13/2025	<p>26-a. Represents many commercial passenger fishing vessels (CPFVs) in the south coast.</p> <p>26-b. Past 10 years, the bag limits for BSB have been reduced from 10 to 5 fish, and the 10 inch to 14 inch spawning age adults have been released. Captains are seeing a recovery, not a crisis.</p> <p>26-c. It's important to state our border region is the fringe of a biomass extending hundreds of miles down into Mexico.</p> <p>26-d. SAC continues to recommend working on science data collection related to BSB while also permitting sport fishing access to the resource. We advocate that the information of all parties be integrated so a good decision is made based on the totality of the inputs.</p>	<p>26-a. Comment noted.</p> <p>26-b. See response 8-c.</p> <p>26-c. See response 20-i.</p> <p>26-d. Comment noted.</p>
27. Merit McCrea, Sport Fishing Association of California science	27-a. Cites Love et al 1996 stating BSB are easier for novice anglers to catch, and mentions spawning aggregations based on anecdotal observations but does not provide scientific description of them. The	27-a. BSB spawning aggregations are well documented in the scientific literature. Here is a list of some citations that reference the BSB spawning aggregations: Turner et al. 1969, Feder et al. 1974,

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
coordinator, 2/13/2025	<p>science makes two primary assumptions that appear unverified. The first is that BSB are aggregated and highly localized at a few specific locations during the summer months.</p> <p>27-b. The second is that participating fish represent most of the local population. Our captains observed that there's a high probability of subsidy by northward migrants during those high catch years.</p> <p>27-c. Asks to look at note provided comparing catch rates of barracuda and BSB.</p>	<p>Love et al. 1996, Hovey et al. 2002, Erisman and Allen 2006, Jarvis et al. 2010, McKinzie et al. 2014, Teesdale et al. 2015.</p> <p>27-b. See response 2-h.</p> <p>27-c. Comment noted.</p>
28. Fred Huber, CPFV Captain, 2/13/2025	<p>28-a. Over 40 years running CPFV.</p> <p>28-b. This past summer, we saw one of the best aggregations of BSB we've seen in 30 years. Barely scratched at what was there.</p> <p>28-c. BSB are a recreational classified fish, and it cannot be trapped or netted.</p> <p>28-d. A seasonal closure on a recreation fish only would be unprecedented. Closing it during the summertime has not been taken into consideration.</p>	<p>28-a. Comment noted.</p> <p>28-b. See response 8-c.</p> <p>28-c. Comment noted.</p> <p>28-d. There are seasonal closures for a variety of species managed by the Department, including: California grunion, rockfish and other groundfish, California sheephead, California spiny lobster, etc.</p>
29. Aaron Graham, Captain of the Native Sun, 2/13/2025	<p>29-a. A video produced by the Sport Fishing Association of California to explain the issues and recommendations and much of this video I did film myself on the water.</p> <p>29-b. The BSB is a recreational resource that has supported California anglers for over a century. As</p>	<p>29-a. The Commission and Department appreciate the effort put forth to produce and share the video.</p> <p>29-b. Comment noted.</p> <p>29-c. The Commission and Department acknowledge and agree with these points with</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>a voracious coastal predator, BSB continue to be a staple for the Southern California recreational fishery, typically ranking within the top five species caught in most years. From CPFVs to kayak and pier fishermen, BSB play an integral role in supporting outdoor recreation in providing food for local families.</p> <p>29-c. Like most of California's coastal resources, BSB abundance has been shown to fluctuate from year to year based on changing environmental conditions. Unfortunately, BSB recruitment and the factors that influence stock productivity are not fully understood.</p> <p>29-d. In 2013, stringent management regulations were put in place to protect the BSB resource changing bag limit from 10 to 5 bass and increased minimum retention limit from 12 to 14 inches in length. BSB mature around 10 ½ inches so regulations ensure BSB have several spawning seasons prior to becoming legal for harvest.</p> <p>29-e. Industry releases far more mature BSB than before and the management changes are finally bearing fruit and seeing improved BSB fishing in southern California.</p> <p>29-f. Committed to improving BSB management and want to see year-round access to this</p>	<p>some additions. While the influence of various changing factors on BSB recruitment and stock productivity are complicated, progress has been made regarding understanding those dynamics that we can incorporate into stock assessments and MSE. For instance, data indicate BSB pulse recruitment is linked to warm-water events, there is a negative relationship between year-to-year recruitment and catch, strong larval recruitment is sporadic, and larval recruitment data have been shown to predict future BSB catch (both CPFV harvest and total estimated catch).</p> <p>29-d. Comment noted.</p> <p>29-e. Comment noted.</p> <p>29-f. Comment noted.</p> <p>29-g. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>resource. Believe path forward is through sound scientific research and continued collaboration between our management partners and the sport fishing community.</p> <p>29-g. The video then shows fishers catching and releasing sublegal BSB.</p>	
30. Jason Cutter, 2/13/2025	<p>30-a. BSB is already regulated, which allows the fish multiple opportunities for spawning before reaching the take size limit.</p> <p>30-b. The size distribution of the BSB caught from 2017 to 2023 in southern California has increased favorably for spawning.</p> <p>30-c. No formal stock assessment exists for the BSB, which is a dangerous precedent for regulations to be made without data in the future.</p> <p>30-d. BSB is listed as least concerned by the International Union for Conservation of Nature, which means it does not need to be the focus of wildlife conservation.</p> <p>30-e. Finally, according to the California Constitution, Article I, Declaration of Rights, Section 25, “the people should have the right to fish upon and from the public lands of the state and the waters thereof.” Does not support further closure of BSB.</p>	<p>30-a. Comment noted.</p> <p>30-b. The Department agrees, see response 8-c for more information.</p> <p>30-c. See response 2-g.</p> <p>30-d. The International Union for Conservation of Nature does not monitor the current health of the BSB population, that is the role of the Department. The last assessment from the International Union for Conservation of Nature was done in May 1, 2008.</p> <p>30-e. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
31. Matt Ryan, 2/13/2025	<p>31-a. Reconsider this decision to close the BSB resource in California.</p> <p>31-b. Been fishing for 40 years in southern California and the BSB was first fish they caught. Through fishing for BSB, learned the importance of conservation and how to maintain a proper bag limit, size limit and to keep a legal fish.</p> <p>31-c. The BSB are delicious. BSB are a sustainable local resource for us to eat and it is available to many diverse people in our community.</p> <p>31-d. Concerned that bag limit reduced to zero will affect license sales and local fishing landings.</p>	<p>31-a. Comment noted.</p> <p>31-b. Comment noted.</p> <p>31-c. See response 8-c.</p> <p>31-d. See response 5-b.</p>
32. Alex Estevez, 2/13/2025	<p>32-a. I agree with all the statements of all the other captains and people that oppose this proposition.</p>	<p>32-a. Comment noted.</p>
33. David Clinkscales, 2/13/2025	<p>33-a. Please listen to these sports fishers. They have over 30 to 50 years on the water fishing every day.</p> <p>33-b. This vote is not about BSB. To me, it looks to be another step towards shutting down fishing in California. Don't shut down the BSB fishery.</p>	<p>33-a. Comment noted.</p> <p>33-b. Comment noted.</p>
34. Brian Siwecki, 2/13/2025	<p>34-a. Lifelong angler and has been fishing since a young age.</p>	<p>34-a. Comment noted.</p> <p>34-b. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>34-b. Thinks commissioners discussing transparencies to be questionable and creates more distrust among fishers.</p> <p>34-c. The lack of quality and quantity of data for BSB has allowed commissioners to skip steps of implementing good policy tactics to push their agenda for personal career gain without sufficient evidence.</p> <p>34-d. Taking away our BSB species poses an economic threat directly and indirectly to local communities. It will greatly affect lower socioeconomic communities for magnitude of generations to come, which transparently will go against the board's vision of diversity, equity, and inclusion.</p> <p>34-e. In my statement with that people won't remember exactly what you said, but never forget how you made them feel.</p>	<p>34-c. Comment noted.</p> <p>34-d. See response 2-j.</p> <p>34-e. Comment noted.</p>
35. Jim Holden, Fish for Life, 2/13/2025	<p>35-a. Takes special needs kids ocean fishing.</p> <p>35-b. I support sustainable fishing practices; I believe that allowing anglers to retain a legally sized BSB is a reasonable and meaningful exception.</p>	<p>35-a. Comment noted.</p> <p>35-b. Comment noted.</p> <p>35-c. Comment noted.</p> <p>35-d. See response 8-c.</p> <p>35-e. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>35-c. Ninety-five percent of the fish we caught on our trips are released and we catch plenty of small BSB.</p> <p>35-d. Their population certainly appears to be thriving.</p> <p>35-e. Allowing the kids to catch and keep a BSB is not just about fishing, it's about instilling a sense of pride, accomplishment, and building self-esteem. I urge the Commission to consider the positive impact that keeping a legal size BSB has on young anglers and ensure that any regulatory changes do not take away this meaningful experience.</p>	
36. Steve Duncan, 2/13/2025	36-a. 100% against barring the BSB fishery. Has taken children and grandchildren fishing. Don't take this away. Three F's of fishing: family, fun and fishing.	36-a. Comment noted.
37. Rene DeLeon, 2/13/2025	37-a. Please don't take away the BSB fishery. Has a lifetime of fishing with family and is important to them.	37-a. Comment noted.
38. Martin Jordan, 2/13/2025	<p>38-a. I've been a fisherman in Southern California for the last 60 some years of my life.</p> <p>38-b. The sports fishing industry will severely suffer consequences economically, and I really believe you should consider keeping the sand bass fishery open.</p>	<p>38-a. Comment noted.</p> <p>38-b. See response 5-b.</p> <p>38-c. See response 8-c.</p> <p>38-d. See response 2-h.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>38-c. There has been no scientific evidence supporting the fact that there is a shortage of this fish in our local waters.</p> <p>38-d. They are a migratory fish and they're cyclatory.</p> <p>38-e. So please heed the answers that the scientific community can respond with and continue surveys to support the local fisheries.</p> <p>38-f. Please consider no closures of the bass fisheries we get to enjoy here in California.</p>	<p>38-e. Comment noted.</p> <p>38-f. Comment noted.</p>
39. John Stanley, 2/13/2025	<p>39-a. Concerned recreational fisherman, and I would like to express my deep concern regarding this proposed amendment on the BSB.</p> <p>39-b. This proposal lacks scientific research and data. There's no evidence, proper data and no stock assessment.</p> <p>39-c. I think it says this on the website, I believe that this proposal will have effects on both our environment and the community of anglers who rely on this species for sustenance and recreation. The long-term implications may inadvertently cause irreversible damage to our marine environment. It is imperative to consider the long-term implications of this proposed amendment. Sustainable fishing practices are essential. Any of our natural</p>	<p>39-a. Comment noted.</p> <p>39-b. See responses 2-d, 2-g, 3-e, and 8-c.</p> <p>39-c. More restrictive conservation measures that promote sustainable fisheries will not cause irreversible damage to the marine environment.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	resources by prioritizing immediate gains over the preservation of the BSB populations.	
40. Andrew S, 2/13/2025	<p>40-a. Against closing down the BSB fishery.</p> <p>40-b. It is a unique fishery where those who are low income are able to participate in this sport. A lot of people, they can't afford to go out on a full day, two day, three day trip to go out and hunt big game fish like tuna or yellowtail or marlin, but many can cash out \$30-40 in order to learn how to fish the same way I learned how to fish with my grandparents and my dad. BSB gives them that opportunity to do so. I would just say please reconsider closing this fishery.</p> <p>40-c. Use proper scientific data that show that BSB is abundant and migratory.</p> <p>40-d. And with the proper bait and techniques you can catch these fish all day long.</p>	<p>40-a. Comment noted.</p> <p>40-b. See response 2-j.</p> <p>40-c. See response 2-d and 2-h.</p> <p>40-d. Comment noted.</p>
41. Motorola edge plus, 2/13/2025	<p>41-a. I'm expressing my deep concern regarding the proposal amendment to alter the regulation on recreational take of BSB.</p> <p>41-b. This proposal lacks scientific research and data.</p> <p>41-c. As a dedicated advocate for preserving our natural ecosystem, I believe that this proposal will</p>	<p>41-a. Comment noted.</p> <p>41-b. See responses 2-d, 2-g, 3-e, and 8-c.</p> <p>41-c. See response 39-c.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	have serious effects on both our environment and our community of anglers who rely on the species for sustenance and recreation. The long-term implication may inadequately cause irreversible damage to our marine environment. It is imperative to consider the long-term implication of this proposed amendment. Sustainable fishing practices are essential to ensure that future generations continue to enjoy the bounty of our natural resources. By prioritizing immediate gain over preservations of BSB populations, we may inadvertently cause irreversible damage to our marine environment. I urge the commission to reconsider this proposal amendment and consider the potential positive impact of our ecosystem.	
42. Rusty Padia, 2/13/2025	42-a. On the proposed amendments, it was saying there would be minimal impacts on small businesses and I just like to go against that. If you take away the BSB fishery, especially for the local half day and three quarter boats, you're going to be forcing them into huge fuel bills running to Catalina. There's going to be a big impact with where you can and can't fish. I work on the Freelance out of Davies Locker, it's a three-quarter day fishing boat, but it would absolutely decimate our twilight run and the half day boats.	42-a. See response 5-b. 42-b. See responses 2-d, 2-g, 3-e, and 8-c.

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	42-b. I don't think there's proper data. I could honestly say there hasn't been any data. Nobody comes on the boat to survey anything. And over the last three or four years, I've seen more and more sand bass over the course of the last three or four years than I have in previous years.	
43. iPhone2 Tim, 2/13/2025	43-a. The BSB is a recreational fishery that built the sport fishing industry. Without this fish there will be a huge economic impact up and down the coast, there will be a domino effect of businesses closing. 43-b. I disagree with this closure.	43-a. See response 5-b. 43-b. Comment noted.
44. Brandon, 2/13/2025	44-a. I'm in favor of reducing the bag limit by one, and I would also like to pose an increase in the size limit. 44-b. I do not agree with reducing it to zero because that will negatively impact charters. 44-c. It is a good recreational fish that a lot of people actually end up throwing back. 44-d. The data is not really too conclusive, but if you would like to increase their numbers and increase the ability for us to catch them in the long term, increase in the size limit and reduce bag limit by one.	44-a. Support for the Department's recommendation is noted. A size limit increase may potentially be considered when considering future conservation measures. 44-b. See response 5-b. 44-c. Comment noted. 44-d. See responses 2-d, 2-g, 3-e, and 8-c.

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
45. Dave Hansen, 2/13/2025	<p>45-a. This is a highly migratory fish. It spends most of its time down in Mexico, and then it migrates up into the southern California area in the June, July, and August months where it's accessible to everybody.</p> <p>45-b. You don't need to have a lot of money to catch this fish. This fish fits into DEI since it is very accessible to the masses. It's a highly recreational fish and is how we started out our career fishing for this fish.</p> <p>45-c. I can't understand why we would regulate a highly migratory fish.</p>	<p>45-a. See response 2-h.</p> <p>45-b. See response 2-j.</p> <p>45-c. BSB are not recognized as a highly migratory species. Highly migratory species are heavily monitored and regulated by the Commission, Department, and other federal agencies.</p>
46. Robert Graber, 2/13/2025	<p>46-a. I've been fishing in California for over 60 years, so I've seen many cycles of fish go up and down.</p> <p>46-b. And I'm in agreement with all the other comments in opposition to this proposal.</p> <p>46-c. Recreational fishermen are the original conservationists, and we support sustainable fisheries.</p> <p>46-d. So please consider getting good science first before making any reductions in our limits. Collect good data, get information on the sustainability of the stock, and get information on the migratory and</p>	<p>46-a. Comment noted.</p> <p>46-b. Comment noted.</p> <p>46-c. Comment noted.</p> <p>46-d. See responses 2-d, 2-g, 3-e, and 8-c.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	spawning habits of these fish before considering any reductions in our limits.	
47. DBCustoms, 2/13/2025	<p>47-a. I strongly disagree with the zero take closure of BSB with no proper science.</p> <p>47-b. Also the huge economic impact that it's going to have on everything from donut shops to bait companies to landings to the pier fishermen. The economic impact is going to be huge.</p> <p>47-c. BSB are great beginner catch and to close that would be really bad.</p>	<p>47-a. See response 39-b.</p> <p>47-b. See response 5-b.</p> <p>47-c. See response 2-k.</p>
48. David's iPad 3, 2/13/2025	<p>48-a. I'm writing to express my deep concerns regarding the potential establishment of the no take for the BSB. I believe the decision lacks sufficient science basis and fails to consider the broader ecological, social, and economic implications. I respectfully urge the commission to avoid a no-take season for barred sand bass on the following points.</p> <p>48-b. Catch rates are not indicative of species decline. Catch rates alone should not be used as a definitive indicator of population health.</p> <p>48-c. Failure to acknowledge migratory behaviors. Reports from the California Department of Fish and</p>	<p>48-a. Comment noted.</p> <p>48-b. See response 2-d.</p> <p>48-c. See response 2-h.</p> <p>48-d. See response 2-k.</p> <p>48-e. See response 5-b.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>Wildlife do not adequately reflect the migratory nature of BSB.</p> <p>48-d. BSB plays a critical role as a gateway species for young and novice anglers in the saltwater recreational fishing community and a no-take would prevent them from introductory into fishing.</p> <p>48-e. The recreational fishing industry is a significant contributor to California's economy and this closure would negatively affect businesses.</p>	
49. Charles Stephens, 2/13/2025	<p>49-a. I beg you not to close this fishery.</p> <p>49-b. I take underprivileged kids and handicapped people to learn to fish. If there's no more party boats, then they're not going to be able to fish. Don't reduce this bag limit. All the sport boats will go out of business, bait barges will go out of business.</p>	<p>49-a. Comment noted.</p> <p>49-b. See response 5-b.</p>
50. Frank Ursitti, H&M Landing Owner, 2/13/2025	<p>50-a. BSB are a vital species for recreational anglers in Southern California.</p> <p>50-b. Excessive restrictions will put fishing operations at risk of closure.</p> <p>50-c. BSB is the gateway species of recreational fishing, fostering a lifelong passion for the sport.</p> <p>50-d. Our fleet observes a high number of juvenile fish daily and short bass are released, continuing to</p>	<p>50-a. Comment noted.</p> <p>50-b. See response 5-b.</p> <p>50-c. See response 2-k.</p> <p>50-d. See responses 2-i and 3-i.</p> <p>50-e. See response 2-h.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>spawn. However, this demographic of BSB goes undocumented. I recommend a study into the movement and behavior of released fish. I also recommend a study into the origin of the large volume of fish appearing seasonally in the summer.</p> <p>50-e. These are not comprised solely of local resident fish. This species is spread over many hundreds of miles of coastline and the California bight is the upper fringe of this range.</p> <p>50-f. Those I represent support implementing a bag reduction to four fish.</p> <p>50-g. Additional science is needed to determine the population dynamics of this cross-border species. We urge the Commission to prioritize research through collaboration with stakeholders.</p>	<p>50-f. Support for the Department's recommendation is noted.</p> <p>50-g. See response 3-i.</p>
51. Aaron Orsini, 2/13/2025	<p>51-a. I would like to reiterate that I support Jason Cutter, Frank Ursitti, Captain Dave Hanson, and others talking here.</p> <p>51-b. I wanted to emphasize the economic impact that this closure would mean for a lot of fishermen. I've seen what happens when charter boats can't make a large enough season to continue their business. And it affects a lot more than just the fishermen and the boats. It affects local businesses, taco shops and many other facets of the economy. So please keep in mind the</p>	<p>51-a. Comment noted.</p> <p>51-b. See response 5b.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	economic impacts these decisions are having all over California and the entire west coast.	
52. Chugey Sepulveda, Pfleger Institute of Environmental Research, 2/13/2025	52-a. We have really unique opportunity right now to bring together managers, fishery scientists and our industry to address some of the important data gaps that we know that have existed and still exist for better managing the BSB resource. This collaboration would actually build a lot of trust between managers and the fishing community. If we were to go towards a closure, it would really detract and it would preclude any data collection. It would set back this collaboration that we need to have between our managers and our fishing industry.	52-a. Comment noted. See response 6-d.
53. Anupa Asokan, Fish On, 2/13/2025	<p>53-a. Most state level management is done without stock assessments. Fishery management is inherently data limited and decisions are regularly made with the best information available.</p> <p>53-b. There's very compelling data here to support a precautionary approach and consideration of a seasonal closure for the future of the species. A seasonal closure can be undone and a fishery collapse cannot.</p> <p>53-c. And I also want to emphasize the opportunity here to support shore-based and true subsistence</p>	<p>53-a. Comment noted. See response 2-g for more background information.</p> <p>53-b. The Commission agrees that there is sufficient data to support more precautionary management measures; however, the Commission and Department want to maintain trust with the fishing community by working together towards filling some information gaps about BSB. The Commission believes BSB are not in danger of a fishery collapse in the next few years. The Department will be working with fishing industry</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>fishing communities who are concentrated on piers and jetties. Catch quality has severely declined for these communities over the decades.</p> <p>53-d. BSB are actually under public health advisories here in the Los Angeles area.</p> <p>53-e. And this is an opportunity to directly support the long-term health of a species and begin to restore resources for near shore fishing communities.</p>	<p>representatives, BSB researchers, and non-governmental organizations representatives over the long term to identify high priority research projects to fill information gaps and discuss sustainable conservation measures, based on the best available science, to protect BSB spawning aggregations in the future.</p> <p>53-c. Comment noted.</p> <p>53-d. Comment noted.</p> <p>53-e. Comment noted.</p>
<p>54. Rick Maurer, 2/13/2025</p>	<p>54-a. I've been scuba diving the Santa Monica Bay area for approximately 50 years and I have never seen this area lacking in BSB. There are large schools of them in the hundreds in 30 to 50 foot of water between Sunset Boulevard and Topanga Canyon and they vary in size from 12 to 18 inches. At the numerous artificial reefs that the Fish and Game Commission has built, they are the most prevalent fish on the reef. Here, they vary in size from 14 to 24 inches and some even larger.</p> <p>54-b. I don't believe this fish should be on the endangered list.</p> <p>54-c. There needs to be more underwater science by scuba divers to determine the actual stock assessment.</p>	<p>54-a. See response 1-a.</p> <p>54-b. See response 1-b.</p> <p>54-c. The Department performs scuba surveys to count and size BSB during the fall months at 10 sites from San Diego to Santa Monica Bay. These surveys have been ongoing since 2017 and the data are being used to inform a SA for BSB. Additionally, the Vantuna Research Group has been performing fish surveys on scuba that sample BSB habitat since the 1970s. These data were presented at the July and November 2024 Marine Resources Committee meetings and the December 2024 Fish and Game Commission meeting.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
55. Bob Lohrman, 2/13/2025	<p>55-a. I grew up in the sport fishing industry running boats for 10 years and then I went over and I started my own business as an offshore environmental company. We work for many different public agencies from the EPA collecting BSB. We've done thousands of scientific otter trawls all along the California bight. We caught a lot of BSB and that data is available.</p> <p>55-b. I fished the spawning aggregates in my earlier years and it was amazing fishery, all of a sudden they would be gone. They're highly migratory. Every year I do a long range trip and we catch plenty of fish. Coming up the coast there was numerous spots of BSB.</p> <p>55-c. They are not endangered at all.</p>	<p>55-a. Comments noted. The Department will be inquiring more about the studies the commentor has participated in.</p> <p>55-b. See response 2-h.</p> <p>55-c. See response 1-b.</p>
56. Mr. Wolf, 2/13/2025	56-a. How come we don't get the studies of a migratory fish?	56-a. See response 2-h.
57. Larry Phillips, American Sport Fishing Association, 2/13/2025	57-a. The challenge we're hearing is a lot of folks are questioning the science. Many of us are involved in the stock assessment process through the council which defines abundance in terms of unfished biomass and clearly we don't have that. We would strongly encourage CDFW to invest in stock assessments that will allow us to allow the	<p>57-a. See responses 2-d, 2-g, 3-e, and 8-c.</p> <p>57-b. Please note a BSB working group that includes representatives of the fishing industry, BSB researchers, and Department staff has been established. See response 10-c.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>agency to accurately estimate biomass. What we can't have is we're fine, we're fine, we're in trouble.</p> <p>57-b. What we need is to collectively partner with the industry. We're willing to help if we have confidence in the need for conservation closure, conservation challenges, reductions in fisheries.</p>	
58. Chris Renk, 2/13/2025	<p>58-a. I am here to emphasize the importance of making an informed decision for our fishing community.</p> <p>58-b. The BSB initiative will be a significant impact on our local economy, businesses, and the next generation of anglers.</p> <p>58-c. Fishing sand bass is more than just a pastime, it's a gateway for the youth, lower income and individuals that are less fortunate to engage and appreciate the marine environment.</p> <p>58-d. Fishing community contributes significantly to our state, 1.2 to 2.5 million fishing licenses are issued annually.</p>	<p>58-a. Comment noted.</p> <p>58-b. See response 5-b.</p> <p>58-c. See response 2-k.</p> <p>58-d. Comment noted.</p>
59. Dwayne James, 2/13/2025	<p>59-a. This last season we had some of the best bass fishing ever, catching multiple at a time. Every quarter mile you can stop and get bass, it's a wonderful fishery.</p> <p>59-b. We need to save it and keep it for our kids in the future.</p>	<p>59-a. Comment noted.</p> <p>59-b. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
60. Tom Troop, 2/13/2025	60-a. Fishing BSB given the caller and family a way to bond, be conservation minded, stay motivated in school and keep from doing drugs.	60-a. Comment noted.
61. Tom Stephens, 2/13/2025	<p>61-a. I don't think there's any scientific studies that are backing this.</p> <p>61-b. These are migratory fish and they should tag some bass from Mexico all the way up the coast. They should start a tagging system like we do with salmon and trout.</p> <p>61-c. Why shut down family businesses that have operated for over 50 years? This will have big impacts on them.</p> <p>61-d. They follow the anchovies, like people they follow the food. You don't catch BSB on an eight inch sardine.</p>	<p>61-a. See responses 2-d, 2-g, 3-e, and 8-c.</p> <p>61-b. See responses 2-h and 3-i.</p> <p>61-c. The Commission wants to manage the BSB resource in a way that it will be available for future generations and does not want to intentionally shut down family businesses. Please see response 5-b.</p> <p>61-d. See response 23-a</p>
62. Owner, 2/13/2025	<p>62-a. You can't catch sand bass on eight inch sardines.</p> <p>62-b. We've been in a warm water year for quite some time now. Now that we're going to anchovies catch is increasing.</p> <p>62-c. It's a migrating fish, it follows the sardines.</p>	<p>62-a. Comment noted.</p> <p>62-b. See response 23-a.</p> <p>62-c. See response 2-h.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
63. Tony Mayfield, 2/13/2025	<p>63-a. I totally disagree with everything you're saying.</p> <p>63.b There's no science behind this. I disagree with everything.</p>	<p>63-a. Comment noted.</p> <p>63-b. See responses 2-d, 2-g, 3-e, and 8-c.</p>
64. the Slider, 2/13/2025	<p>64-a. About 60 years of fishing experience in southern California.</p> <p>64-b. There's BSB out there every single time I go out and the ratio of sand bass to calico is about two to one.</p> <p>64-c. These fish are migratory and they're out there all year long.</p> <p>64-d. Please don't limit the catch of BSB because it's introductory fish for all the kids.</p>	<p>64-a. Comment noted.</p> <p>64-b. Comment noted.</p> <p>64-c. See response 2-h.</p> <p>64-d. See response 2-k.</p>
65. Lisa Nishko, 2/13/2025	<p>65-a. I have well over 30 plus years fishing and scuba diving in Southern California.</p> <p>65-b. I have personally caught and seen many sand bass and can assure you there is no such shortage.</p> <p>65-c. I am against your unnecessary and redundant restrictions on any and all of our coveted fish. I implore you to not take any more fish away from us. This is not a sports fishing problem. As you can see and hear from all of us, your science is not adding up.</p>	<p>65-a. Comment noted.</p> <p>65-b. Comment noted.</p> <p>65-c. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
66. Frank Moreno, 2/13/2025	<p>66-a. I agree with everything that's been said.</p> <p>66-b. There is a problem that we're not talking about, the water, and that's the there's so much pollution in our area. That's where we need to focus on.</p> <p>66-c. The fish are plentiful. I don't believe that we should restrict them.</p> <p>66-d. Our kids need to be able to fish as an introductory fish that needs to be available to our fishery.</p>	<p>66-a. Comment noted.</p> <p>66-b. See response 14-c.</p> <p>66-c. Comment noted.</p> <p>66-d. See response 2-k.</p>
67. Patrick, 2/13/2025	<p>67-a. You guys are taking the fish counts from the last 10 years for BSB on the sport boats. In the last 10 years, we've had a big run of pelagics fish come in. So sport boats, even the half day boats, are spending a lot of their time looking for the pelagic fish and they're not fishing for the BSB. Once the pelagic fish disappear more, you're going to see a lot higher fish counts on the BSB.</p>	<p>67-a. See response 2-e.</p>
68. Joaquin, 2/13/2025	<p>68-a. I'm a local deaf fisherman from Southern California.</p> <p>68-b. Commissioners reducing BSB fishing in Southern California is unnecessarily harmful to the economy. BSB fishing supports thousands of jobs and generates millions for local businesses, including tackle shops, charter boats, and tourism.</p>	<p>68-a. Comment noted.</p> <p>68-b. See response 5-b.</p> <p>68-c. See response 8-c.</p> <p>68-d. See response 12-c.</p> <p>68-e. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>Restrictions would hurt these industries and coastal communities.</p> <p>68-c. Second, conservation success. Existing size and bag limits are working. Studies show BSB are one of the top sport fish in Southern California, and current management strategies are keeping populations stable.</p> <p>68-d. Third, the real environmental impact. The biggest threats to BSB are habitat loss and environmental changes, not responsible fishing. Addressing pollution and habitat degradation would do more for conservation than limiting anglers.</p> <p>68-e. Fourth, public trust. Anglers support conservation and have historically funded fishery programs. More unnecessary restrictions will damage trust and reduce participation in the sport.</p>	
<p>69. Alan Clowers, Fishing Guide, 2/13/2025</p>	<p>69-a. I agree with everyone's comments.</p> <p>69-b. There's many kids that can't afford to go offshore and I've taken hundreds of kids on my little skiff to fish for BSB.</p> <p>69-c. I plead with you guys to keep it at five fish and I do not agree with the people that said to reduce it to four, I believe it should stay at five.</p> <p>69-d. I see flocks and flocks of flocks BSB out there and please don't take this away from the kids.</p>	<p>69-a. Comment noted.</p> <p>69-b. See response 2-j.</p> <p>69-c. Comment noted.</p> <p>69-d. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
70. Caller 767, 2/13/2025	<p>70-a. I agree with all the prior callers.</p> <p>70-b. I'm just asking you to not ban us from more civil liberties that we should have. You're not using science. You're not going and actually finding where the fish are. You're going out and fishing wherever they're not.</p>	<p>70-a. Comment noted.</p> <p>70-b. See responses 2-d, 2-g, 3-e, and 8-c.</p>
71. Lyall Bellquist, 2/14/25	<p>71-a. Many public commentators have been saying the conservation concerns regarding BSB populations are only based on catch rates, which is untrue; the concern is based on numerous scientific data sources (both fishery-dependent and fishery-independent).</p> <p>71-b. All the information/data combined illustrates two major points of concern: 1) intense fishing pressure at documented aggregation sites was followed by the collapse in BSB catch metrics, and a decade-long absence of spawning aggregations, and 2) recruitment events are highly inconsistent and depend on specific oceanographic conditions.</p> <p>71-c. Some public comments suggested that spawning aggregations are "unverified" or "anecdotal" or based on a single study, which is untrue; all of us have personal experiences, there are multiple studies, multiple spatial data analyses, and video evidence that all confirms the existence</p>	<p>71-a. Comment noted. See response 2-c and 2-d.</p> <p>71-b. Comment noted.</p> <p>71-c. See comment 27-a.</p> <p>71-d. Comment noted.</p> <p>71-e. Comment noted. See response 2-h.</p> <p>71-f. Comment noted. See response 2-g.</p> <p>71-g. Comment noted.</p> <p>71-h. Comment noted.</p> <p>71-i. Comment noted.</p>

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>of these summer aggregations and the targeting of these sites by fishing fleets.</p> <p>71-d. Photos of sub-legal fish were used as evidence of strong recruitment, but they actually support scientific findings of "pulse recruitment"; recruitment occurs in cycles, with a current pulse into the fishery expected to last from 2022-2028, after which another decade-long period of low recruitment could occur; without regulation, overfishing during this pulse could lead to another population crash.</p> <p>71-e. Some claim there is insufficient tagging data, but BSB have been studied extensively, including three large-scale tag-recapture programs (1960s, 1990, 2010s) and several acoustic tagging studies (at least eight published BSB tagging studies since 2010); best available science from all studies combined shows BSB are not highly migratory beyond seasonal spawning movements.</p> <p>71-f. Agrees a formal stock assessment is lacking and multiple publications have called for one, but we do not need a stock assessment to tell us the aggregations have disappeared, the catch and size structure were both hyperstable, the landings declined by over 90% relative to the 2005-2007</p>	

Attachment 1 – Pre-adoption Statement of Reasons

28.30– Responses to Public Comments: Barred Sand Bass Limit

Comment #, Name, affiliation & date	Comment Summary	California Department of Fish and Wildlife (Department) Response
	<p>peak, and the spawning stock biomass has been significantly reduced.</p> <p>71-g. Meaningful management decisions are needed now, not later.</p> <p>71-h. If a stock assessment is conducted it needs to explicitly account for "hyperstability" in both catch and age/length data.</p> <p>71-i. Pictures, figures, and citations were included throughout the letter.</p>	

CITY OF DANA POINT



CITY COUNCIL

Matthew Pagano
Mayor

John Gabbard
Mayor Pro Tem

Jamey M. Federico

Mike Frost

Michael Villar

February 18, 2025

California Fish and Game Commission
P.O. Box 944209 Sacramento, CA 94244-2090

Subject: Letter of Concern Regarding Proposed Amendments to Regulations for the Recreational Barred Sand Bass Fishery

Dear Commissioners,

The City of Dana Point is home to a thriving coastal zone that hosts thousands of anglers annually. We are writing to express our concern regarding the proposed amendments to recreational fishing regulations for barred sand bass (*Paralabrax nebulifer*). While we understand the necessity of taking precautionary measures to ensure the sustainability of this important fish species, we believe it is essential to consider the broader implications of these regulatory changes on our local fishing community.

The City of Dana Point values its coastal resources and the recreational fishing activities that contribute significantly to our local economy and community engagement. Barred sand bass is a sought-after species for many anglers and fishing charter operators, who rely on this fish as a primary target during peak fishing seasons. A reduction in bag limits and potential restrictions could impact the livelihoods of local businesses and may discourage recreational fishing participation in our waters.

Furthermore, we encourage the California Department of Fish and Wildlife (CDFW) to maintain open lines of communication with local stakeholders. Input from the fishing community is vital in shaping effective management strategies that account for both ecological sustainability and the values of the residents and businesses that rely on these resources. It is important to note that the affected community includes anglers fishing from piers, breakwaters, kayaks, small boats, and commercial passenger boats. We hope that there has been adequate outreach to these groups and that their input, along with scientific data, is being considered in the decision-making process.

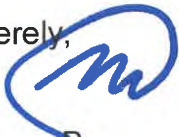
We are also concerned about the need for enhanced scientific data to monitor and understand the barred sand bass population dynamics. Addressing factors beyond fishing pressure, such as environmental changes and habitat conditions, will be essential for implementing successful management measures. We request that the CDFW consider flexible approaches that may include gear regulations, monitoring initiatives, or targeted outreach programs.

Harboring the Good Life

The City of Dana Point is committed to supporting sustainable practices while ensuring that our fishing community continues to thrive. We sincerely hope that the Commission will take these concerns into account as it deliberates on the proposed amendments.

Thank you for your attention to this important matter. We look forward to your response and appreciate your continued efforts to balance conservation with the interests of our local communities.

Sincerely,

A handwritten signature in blue ink, appearing to be 'M. Pagano', written over the word 'Sincerely,'.

Matthew Pagano
Mayor
City of Dana Point



Outlook

public comment re: Barred Sand Bass

From Bellquist, Lyall [REDACTED]

Date Tue 02/11/2025 08:38 AM

To FGC <FGC@fgc.ca.gov>

Dear California Fish and Game Commission,

Please find the attached letter for public comment regarding the potential rulemaking in the California recreational Barred Sand Bass fishery.

Sincerely,
Lyll Bellquist, PhD

February 11, 2025

Dear California Fish and Game Commission,

This letter is submitted in reference to the Notice for new regulations in the Barred Sand Bass fishery.

I am a lifelong recreational fisherman and diver, deriving decades of enjoyment, inspiration, as well as my entire professional career from our unique, dynamic, and healthy marine ecosystems in California. I hold a B.S. in aquatic biology from UC Santa Barbara (2002), M.S. in marine biology from CSU Long Beach (2006), and Ph.D. in marine biology from Scripps Institution of Oceanography (2015). Throughout my career, I have worked collaboratively in industry, academic, federal agency, small NGO, and global NGO landscapes, most recently as a former Senior Fisheries Scientist with The Nature Conservancy, California Oceans Program and Visiting Scientist at Scripps Institution of Oceanography. My background has given me a diverse portfolio of expertise and stakeholder lenses to draw from, particularly regarding marine recreational fisheries management.

In the context of the proposed Barred Sand Bass (BSB) rulemaking, I have been involved in multiple collaborative fisheries research projects that have contributed data related to the BSB fishery, and I participated in the CDFW-led collaborative BSB working group that began in early 2024. For historical context, I fished for BSB here in the 1990s and early 2000s, when over 1M fish were caught annually by the CPFVs and private vessels combined; I was here during the BSB fishery decline from 2007-2012; I watched the BSB spawning aggregations disappear from 2012-2014, remaining absent from 2014-2023; and I saw the nascent emergence of the first new cohort in the last decade during this year's summer spawning season, which was heavily fished under status quo regulations.

In consideration of a potential rulemaking for BSB, there are several data-driven points that we did not necessarily have during the previous rulemaking in 2013:

- 1. Today, the BSB recreational fishery in southern California is not data-limited** – There are approximately 30 peer-reviewed publications focusing directly or indirectly on this species since 2000; CDFW manages an extensive time series of reliable and widely-used fishery-dependent data for the two primary modes of BSB fishing mortality, i.e. private vessels and Commercial Passenger Fishing Vessels; there are several sources of fishery-independent datasets and time series from well-established data collection programs (e.g., CalCOFI, CCFRP, hydroacoustic surveys, and multiple subtidal survey programs); and oceanographic monitoring datasets have successfully been integrated with analyses on the BSB fishery to understand the relative importance of both fishing and the environment on population dynamics for this species. **Our understanding of the health of the BSB fishery comes from numerous sources of rigorous and collaborative science, all of which are in agreement about the decline of the fishery from 2007-2012 and the sustained collapse from 2012-2023.**
- 2. We did not do enough in 2013 to rebuild the BSB fishery** – In 2013, the California F&G Commission recognized two primary concerns raised by CDFW in the recreational coastal bass fisheries: 1) gradual, long-term decline in Kelp Bass populations over the previous decades, and

2) a precipitous decline in BSB populations from 2007-2012. The Commission expressed particular concern about BSB due to their high vulnerability to overfishing during spawning aggregations. During the management process, CDFW provided a range of potential regulatory options (including a partial spawning season closure). The Commission instead chose to adjust bag and size limits, reducing the recreational daily bag limit in half from 10 to 5 fish per person per day, and increased the minimum size limit from 12 to 14 inches for all three bass species.

We now know that these bag/size limit regulations resulted in:

1. Strong success with Kelp Bass recovery, illustrated by catches and sizes recovering approximately 4 years later (as predicted), which is supported in the scientific literature and by the recreational fishing community
2. Failure for BSB recovery, illustrated by the continued BSB decline, disappearance of all known spawning aggregations, and effective fishery collapse from 2013-2023 (this is supported by several recent scientific publications authored by researchers from numerous academic research institutions and management agencies)
3. **We have a new opportunity in 2024** – In recognition of the Kelp Bass success story but the BSB failure, the renewed focus on BSB is especially timely for two reasons: 1) the last decade of BSB fishery collapse indicates that stronger management intervention is necessary to rebuild and sustain the spawning stock, and 2) a small recruitment pulse was observed (and heavily fished) this last summer during spawning season, indicating that we have a window of opportunity to conserve the incoming spawning potential, which could accelerate the rebuilding timeline. This pulse is comprised primarily of fish that were born during the 2014-2017 marine heatwave and subsequent El Niño. In other words, this species is trying to rebuild itself under the recent favorable environmental conditions, but the fishery continues to target the spawning aggregations under status quo regulations with highly predictable consequences. This is especially problematic given that the best available science shows that this recruitment pulse has no additional cohorts coming behind it, so our opportunity to conserve the nascent spawning stock biomass is now.
4. **A June-August spawning season closure would allow the fishery to rebuild** – In recognition of the fishery conservation opportunity before us, CDFW has been leading a collaborative working group with academics and recreational industry representatives. This discussion started with a science-based proposal by CDFW to implement a spawning season closure combined with a non-spawning season bag limit reduction, but after industry input, this evolved into an evaluation of bag limit reduction scenarios. An important question to ask ourselves: If a 5-fish reduction (plus a 2-inch size limit increase) didn't work for BSB in 2013, then why would we expect another partial reduction to have any effect today? We can evaluate the nuances of catch savings under 1-5 fish scenarios, but we already know that extreme catch savings in the short-term are necessary for the BSB fishery to rebuild.
5. **Spawning season closures are common, both globally and in California, for conserving spawning stocks** – Based on the best available science as well as lessons that we now have from other spawning aggregations around the world (e.g., Nassau Grouper in the Caribbean),

spawning season closures are common for a variety of reasons, particularly the conservation of the spawning stock for aggregating species. **Even for non-aggregating species, California already has spawning season closures/regulations in place for multiple fisheries** (e.g., spawning season closures are already successfully used in CA for rockfishes, lingcod, cabezon, spiny lobster, grunion; and a reduced bag limit exists for white seabass during spawning season). Implementing a spawning season closure would not represent a new type of regulation among California state-managed fisheries.

6. **A seasonal closure will not cause significant hardship to the recreational fishing industry** – Past hardship to the fleet was likely incurred predominantly during the 2007-2012 period when BSB landings declined precipitously. At that point, the loss of BSB spawning aggregations forced the subset of CPFVs that target BSB (i.e. half- and three-quarter day CPFVs operating between Ventura and San Diego) to shift toward other species, such as rockfishes. This shift allowed the vessels to continue operating successfully in the virtual absence of BSB landings from 2013-2023. We thus already have a decade of fishery evidence that the fleet can successfully navigate a June-August spawning season closure because **these vessels already operated successfully from 2013-2023 when BSB aggregations were absent after the fishery closed itself under status quo regulations. A seasonal closure would thus not add any hardship that hasn't already been successfully navigated by the fleet for the last decade.**

In summary, the best available science and our past lessons learned indicate:

1. Based on the Kelp Bass success story, management measures that appropriately account for the life history of the focal species can rebuild popular nearshore fisheries in southern California within relatively short time frames (e.g., 5 years for Kelp Bass).
2. Stronger measures are needed to recover BSB spawning aggregations and rebuild the fishery, and the best available science suggests a Jun-Aug spawning season closure is the best option.
3. There is no industry impact associated with a summer closure for BSB that the fleet hasn't already successfully navigated during the last ten years of fishery collapse.
4. Development of a stock assessment for BSB while interim conservation measures are implemented over a three-year period would be extremely helpful for clarification of stock status, streamlining decision-making, minimizing debates and mistrust between fishery stakeholders, and reducing current management decision lags in this highly important fishery.
5. **With this new fishery rebuilding opportunity, we can choose to spend down the principal like we did in the past, or we can conserve it and live off the dividends.**

Sincerely,



Lyall Bellquist, PhD

Timeline of BSB fishery-relevant publications beginning in 1996:

1. Love, M.S., Brooks, A., Busatto, D., Stephens, J. and Gregory, P.A., 1996. Aspects of the life histories of the kelp bass, *Paralabrax clathratus*, and barred sand bass, *P. nebulifer*, from the southern California Bight. *Fishery Bulletin*, 94(3), pp.472-481.
2. Love, M.S., Brooks, A. and Ally, J.R.R., 1996. An analysis of commercial passenger fishing vessel fisheries for kelp bass and barred sand bass in the Southern California Bight. *California Fish and Game*, 82(3), pp.105-121.
3. Baca-Hovey, C. and Cooper, L.D., 2001. Reproductive biology of the barred sand bass (*Paralabrax nebulifer*). SCCWRP.
4. Hovey, C.B., Allen, L.G. and Hovey, T.E., 2002. The reproductive pattern of barred sand bass (*Paralabrax nebulifer*) from southern California. *California Cooperative Oceanic Fisheries Investigations Report*, pp.174-181.
5. Mendoza-Carranza, M. and Rosales-Casian, J.A., 2002. Feeding ecology of juvenile kelp bass (*Paralabrax clathratus*) and barred sand bass (*P. nebulifer*) in Punta Banda Estuary, Baja California, Mexico. *Bulletin of the Southern CA Academy of Sciences*, 101(3), pp.103-117.
6. Avendaño-Ibarra, R., Hernández-Rivas, M.E. and de Silva-Dávila, R., 2009. Reproductive strategies of sea basses based on larval abundance in Magdalena Bay, Mexico, 1982–1986. *North American Journal of Fisheries Management*, 29(1), pp.205-215.
7. Allen, L.G., 2010. The impact of intense recreational fishing pressure on spawning aggregations of barred sand bass (*Paralabrax nebulifer*) off the Los Angeles Metropolitan Area.
8. Jarvis, E.T., Linardich, C. and Valle, C.F., 2010. Spawning-related movements of barred sand bass, *Paralabrax nebulifer*, in southern California: interpretations from two decades of historical tag and recapture data. *Bulletin, Southern California Academy of Sciences*, 109(3), pp.123-143.
9. Mason, T.J. and Lowe, C.G., 2010. Home range, habitat use, and site fidelity of barred sand bass within a southern California marine protected area. *Fisheries Research*, 106(1), pp.93-101.
10. Erisman, B.E., Allen, L.G., Claisse, J.T., Pondella, D.J., Miller, E.F. and Murray, J.H., 2011. The illusion of plenty: hyperstability masks collapses in two recreational fisheries that target fish spawning aggregations. *Canadian Journal of Fisheries and Aquatic Sciences*, 68(10), pp.1705-1716.
11. Allen, L.G. and Block, H.E., 2012. Planktonic larval duration, settlement, and growth rates of the young-of-the-year of two sand basses (*Paralabrax nebulifer* and *P. maculatofasciatus*: fam. Serranidae) from Southern California. *Bulletin, Southern California Academy of Sciences*, 111(1), pp.15-21.
12. Jarvis, E.T., Loke-Smith, K.A., Evans, K., Kloppe, R.E., Young, K.A. and Valle, C.F., 2014. Reproductive potential and spawning periodicity in barred sand bass (*Paralabrax nebulifer*) from the San Pedro Shelf, southern California. *California Fish and Game*, 100(2), pp.289-309.
13. Jarvis, E.T., Gliniak, H.L. and Valle, C.F., 2014. Effects of fishing and the environment on the long-term sustainability of the recreational saltwater bass fishery in southern California. *California Fish and Game*, 100(2), pp.234-259.
14. McKinzie, M.K., Jarvis, E.T. and Lowe, C.G., 2014. Fine-scale horizontal and vertical movement of barred sand bass, *Paralabrax nebulifer*, during spawning and non-spawning seasons. *Fisheries research*, 150, pp.66-75.
15. Miller, E.F. and Erisman, B., 2014. Long-term trends of southern California's kelp and barred sand bass populations: a fishery-independent assessment. *California Cooperative Oceanic Fisheries Investigations Reports*, 55, pp.1-9.

16. Bellquist, L.F., 2015. A historical perspective of California recreational fisheries using a new database of "trophy" fish records (1966-2013), combined with fisheries analyses of three species in the genus *Paralabrax*. University of California, San Diego.
17. Patterson, C.N., Chabot, C.L., Robertson, J.M., Erisman, B., Cota-Nieto, J.J. and Allen, L.G. 2015. The genetic diversity and population structure of Barred Sand Bass, *Paralabrax nebulifer*: a historically important fisheries species off southern and Baja California. *CalCOFI Rep.* vol. 56
18. Teesdale, G.N., Wolfe, B.W. and Lowe, C.G., 2015. Patterns of home ranging, site fidelity, and seasonal spawning migration of barred sand bass caught within the Palos Verdes Shelf Superfund Site. *Marine Ecology Progress Series*, 539, pp.255-269.
19. Bellquist, L. and Semmens, B.X., 2016. Temporal and spatial dynamics of 'trophy'-sized demersal fishes off the California (USA) coast, 1966 to 2013. *Marine Ecology Progress Series*, 547, pp.1-18.
20. Erisman, B.E., Cota-Nieto, J.J., Moreno-Báez, M. and Aburto-Oropeza, O., 2017. Vulnerability of spawning aggregations of a coastal marine fish to a small-scale fishery. *Marine Biology*, 164, pp.1-18.
21. Bellquist, L., Semmens, B., Stohs, S. and Siddall, A., 2017. Impacts of recently implemented recreational fisheries regulations on the Commercial Passenger Fishing Vessel fishery for *Paralabrax* sp. in California. *Marine Policy*, 86, pp.134-143.
22. Won, C., 2018. Spatial and temporal effects of lunar phase and sea surface temperature on spawning Barred Sand Bass (*Paralabrax nebulifer*) off Huntington Beach, CA (Doctoral dissertation, California State University, Northridge).
23. Cota-Nieto, J.J., Erisman, B., Aburto-Oropeza, O., Moreno-Báez, M., Hinojosa-Arango, G. and Johnson, A.F., 2018. Participatory management in a small-scale coastal fishery—Punta Abreojos, Pacific coast of Baja California Sur, Mexico. *Regional Studies in Marine Science*, 18, pp.68-79.
24. Davis, J.P., Valle, C.F., Haggerty, M.B. and Gliniak, H.L., 2019. Comparing video and visual survey techniques for Barred Sand Bass in rocky reef ecotone habitats. *California Fish and Game*, 105(4), pp.233-253.
25. Logan, R.K. and Lowe, C.G., 2019. Space use and inferred spawning activity of three exploited gamefish species on a large artificial reef. *Fisheries Management and Ecology*, 26(6), pp.558-569.
26. Allen, L.G., Won, C., Bolser, D.G. and Erisman, B.E., 2020. Feasibility of hydroacoustic surveys of spawning aggregations for monitoring Barred Sand Bass populations off southern California. *Calif Fish Wildl*, 106, pp.139-155.
27. Walker, K.M., Penttila, K.M., Jarvis-Mason, E.T. and Valle, C.F., 2020. Validated age and growth of barred sand bass within the Southern California Bight. *Calif Fish Wildl J*, 106, pp.205-220.
28. Mason, E.T.J., Watson, W., Ward, E.J., Thompson, A.R. and Semmens, B.X., 2023. Environment-driven trends in fish larval abundance predict fishery recruitment in two temperate reef congeners: Mechanisms and implications for fishery recovery under a changing ocean. *bioRxiv*, pp.2023-10.
29. Mason, E.T., 2023. Reconstructing the population dynamics of southern California *Paralabrax* spp. in the face of a changing ocean. University of California, San Diego.
30. Mason, E.T.J., Riecke, T.V., Bellquist, L.F., Pondella II, D.J. and Semmens, B.X., 2024. Recruitment limitation increases susceptibility to fishing-induced collapse in a spawning aggregation fishery. *Marine Ecology Progress Series*, 738, pp.203-224.
31. Coscino, C.L., Bellquist, L., Harford, W.J. and Semmens, B.X., 2024. Influence of life history characteristics on data-limited stock status assertions and minimum size limit evaluations using Length-Based Spawning Potential Ratio (LBSPR). *Fisheries Research*, 276, p.107036.

public comment re: barred sand bass

From Bellquist, Lyall [REDACTED]

Date Wed 04/02/2025 07:26 PM

To FGC <FGC@fgc.ca.gov>

Dear California Fish and Game Commission,

Please find the attached letter for public comment regarding the potential rulemaking in the California recreational Barred Sand Bass fishery.

Sincerely,
Lyll Bellquist, PhD

Public comment on proposed changes to recreational Barred Sand Bass (BSB) fishery regulations

April 2, 2025

Dear California Fish and Game Commission,

The California Marine Life Management Act (MLMA) places the burden of proof onto the state management process to demonstrate that the recreational barred sand bass fishery is sustainable, which has not been accomplished. To the contrary, the California Department of Fish and Wildlife (CDFW) demonstrated during the last year of working group discussions that the fishery declined precipitously from approximately 2007 to 2013, remained virtually absent from 2013-2023, and exhibited nascent emergence in summer of 2024 (which scientists predicted), reaching landings last year of only about 6% of the historical peak. **The California MLMA also “strongly emphasizes science-based management (CDFW, 2025),” but the full Commission has only been given a single, brief barred sand bass science presentation (only 15 slides) from CDFW during the December 2024 meeting** (prior CDFW science presentations were reserved to the MRC meetings and working group meetings only). While the December presentation was very informative and did initiate discussion, it did not include fundamentally important recruitment information that was published on Barred Sand Bass during the last year (Mason et al. 2024, 2025). Simply put, the historical peak of over 1M fish landed (CPFVs and private vessels combined) annually from only five known spawning sites, followed by a precipitous decline due to documented hyperstability, near-decade-long virtual absence of the fishery, disappearance of spawning aggregations, long periods of failed larval recruitment, and heavy status quo targeting of the incoming fishery recruitment pulse in 2024, **does not constitute sustainability.** **The several available data sources and publications indicate that the barred sand bass fishery is not sustainable, and meaningful management action for is needed for this fishery, yet the best available science has not been presented to the Commission.**

The available science relevant to barred sand bass was also not presented during the second full Commission meeting on this issue (in Feb 2025) – rather, the available science became a target of what appeared to be public misinterpretation of larval, juvenile, and fishery recruitment. During that meeting, anecdotal fishing community comments, claims, photos, and videos heavily influenced the discussion, but **it wasn’t made clear during the meeting that these anecdotal references actually support the available science**, rather than refute it as most stakeholders seemed to perceive. The full Commission and the fishing public have thus not been provided a comprehensive scientific understanding of the dual problem faced by the barred sand bass fishery, and **it was not communicated to the full Commission or to the public that the anecdotal information and the available science are actually very well aligned, and they point to the same need for meaningful management action.**

Approximately one year ago, I was invited by both CDFW and the Sportfishing Association of California (SAC) to join the collaborative working group comprised primarily of recreational fishing industry representatives and CDFW marine fishery biologists. Based on the available science, a long history of collaborations with the fishing fleet, and several independent data sources indicating a need for conservation measures in this fishery, CDFW initiated working group discussions by proposing a 3-month spawning season bag limit of 0 fish, and a 2-fish limit during the remainder of the year. During the November 2024 MRC meeting and the December 2024 full Commission meeting, CDFW estimated that this proposed measure would offer a 76.1% annual catch savings for barred sand bass. However, after side meetings between CDFW and recreational

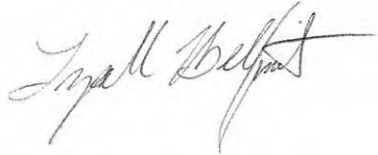
industry representatives, CDFW shifted to a far less impactful recommendation of a 1-fish year-round reduction in the daily bag limit (i.e. from 5 fish/day to 4 fish/day) – CDFW demonstrated that this would only offer a 3.5% annual catch savings (based on 2023 data). This means that CDFW has not demonstrated that the fishery is sustainable as required by the MLMA, and has not presented the full body of science that is fundamentally important to the barred sand bass fishery as is emphasized by the MLMA – instead, CDFW has demonstrated that the fishery is in need of meaningful conservation action, but they reduced their recommendation from a 76.1% catch savings to only a 3.5% catch savings. **We already know that a 3.5% reduction in catch will not provide meaningful conservation impact, and if sustainability in this fishery cannot be demonstrated, then greater catch savings than 3.5% are needed until a stock assessment can provide clearer guidance for management of this fishery. Since 2013, this is now the second time that CDFW has proposed seasonal spawning protections (despite subsequently walking this recommendation back). Do we sincerely want to go on record as twice kicking the can down the road when we know the fishery is not sustainable? The amount and alignment of science and anecdotal information we have for barred sand bass, most of which point to the need for spawning season protections, would enable a clear rulemaking in any other fishery.**

Lastly, I'd like to share a story about barred sand bass tagging efforts in one study (Bellquist 2015), and how the SAC vessel captains perceived the barred sand bass fishery health during the years that followed (from Bellquist et al. 2017). From 2012-2014, I led a tagging project in collaboration with SAC, with the objective of understanding kelp bass and barred sand bass demographics and movements patterns. This project occurred at the time when both kelp bass and barred sand bass were already being recognized by CDFW for needed management action. With funding from the state of California, I worked collaboratively with the SAC fleet, and conducted 51 scientific fishing charters aboard 12 Commercial Passenger Fishing Vessels (CPFVs, i.e. 'party-boats'). Working with 13 different CPFV captains over a two-year period, we tagged a total of 12,581 kelp bass, gaining critically important information about that species. However, we were only able to tag 1079 barred sand bass, despite searching repeatedly at their known spawning sites during peak spawning season. We searched at known aggregation sites off Huntington Beach, Oceanside, and Imperial Beach, but none of the captains were able to find concentrations of spawning fish that we had all experienced while fishing in years prior. Our mutual realization that the aggregations had disappeared coastwide informed a new study (Bellquist et al. 2017), in which we again worked collaboratively with SAC, and surveyed almost all of the ½-day and ¾-day captains operating at that time. Of the 50 captains identified by SAC, we successfully surveyed 45 of them – this 90% coverage still represents the most comprehensive synthesis of captains' perspectives on the kelp bass and barred sand bass fishery to date. These surveys, which were designed specifically to understand the captains' perceptions of fishery health for both kelp bass and barred sand bass, equated to over 500 captain-years of experience targeting both bass species. In this study, 93% of the captains considered Kelp Bass to be important to the recreational fleet, and 84% of them believed the stock was healthy or very healthy. However, while 95% of the captains considered Barred Sand Bass to be important to the recreational fleet, only 60% of the vessel captains believed the stock was healthy or very healthy. **There was thus a clear recognition by the CPFV captains that the barred sand bass fishery was less healthy than the kelp bass fishery.** During the years that followed, the aggregations remained absent, and the fleet successfully navigated this spawning stock disappearance by focusing on several other species, such as rockfishes, kelp bass, and offshore pelagic species. Last year, sand bass landings inched up to only about 6% of their historical peak. However, in the face of potential new restrictions, the fleet changed their perception of barred sand bass stock health despite what the best available science indicates.

Nobody, including myself, wants to close the spawning season for this fishery, but the impact is clear, the need is clear, the science is abundant and clear, and information from the fleet is in alignment with this despite previous arguments. There is a reason why we protect spawning seasons and grounds for so many species around the world – vulnerability to overharvest is simply too high in some cases.

Sincerely,

Lyall Bellquist, PhD

A handwritten signature in cursive script, reading "Lyall Bellquist". The signature is written in dark ink on a light background.

Literature cited:

Bellquist, L.F., 2015. A historical perspective of California recreational fisheries using a new database of "trophy" fish records (1966-2013), combined with fisheries analyses of three species in the genus *Paralabrax*. University of California, San Diego.

Bellquist, L., Semmens, B., Stohs, S. and Siddall, A., 2017. Impacts of recently implemented recreational fisheries regulations on the Commercial Passenger Fishing Vessel fishery for *Paralabrax* sp. in California. *Marine Policy*, 86, pp.134-143.

Mason, E.T.J., Riecke, T.V., Bellquist, L.F., Pondella II, D.J. and Semmens, B.X., 2024. Recruitment limitation increases susceptibility to fishing-induced collapse in a spawning aggregation fishery. *Marine Ecology Progress Series*, 738, pp.203-224.

Jarvis Mason, E.T., Watson, W., Ward, E.J., Thompson, A.R. and Semmens, B.X., 2025. Environment-driven trends in larval abundance predict fishery recruitment in two saltwater basses. *ICES Journal of Marine Science*, 82(2), p.fsae196.

Barred sand bass closure

From David Alatorre [REDACTED]
Date Tue 02/11/2025 01:45 PM
To FGC <FGC@fgc.ca.gov>

Hello,

My name is David Alatorre, a saltwater fisherman from Palmdale California currently deployed half a world away. I'd like to explain my experience with the barred Sand bass in my local Long Beach fishery. Sand bass in my opinion are an introduction fish and should not be chosen as a no take fish. They are often caught as a bycatch when targeting other species. Once you hook up with one, you're likely going to continue hooking up with more. They are a wonderful fish to catch when there's someone new on the boat and they want to catch their first "big" fish. That's how I felt when I was first introduced to sportfishing.

I don't think any half day charter boat could survive without the barred sand bass. It would shift the weight to other local species like sculpin and calico bass. Not forgetting to mention, how could a sport like this be introduced to new anglers of all ages without the barred sand bass. A half day boat would become obsolete, no longer able to effectively leave the harbor and show "new comers" a great day of fishing with minimal effort and technique.

Everyone looks forward to fishing and more so when a family can incorporate into their weekend schedule. Without the half day am or pm boats having the barred sand bass to fish, the future of sportfishing would be in jeopardy.

As a fisherman I personally don't keep the barred sand bass when I go fishing, I understand the importance of conservation and I know there's better, fun fish to catch but when I stare at the cattle boats of people leaning over the rail and screaming in excitement over the fish in my local area. I remember when I was that guy, stoked to land a bass, take it home and show off my catch. Fish tacos caught, not bought and I can't imagine a life without those moments and I have the barred sand bass to thank. It's memories like those that kept me coming back. It would be a sad closing to that chapter for the California angler.

Sent from my iPhone

Sand bass support

From Austin Carter [REDACTED]
Date Tue 02/11/2025 04:40 PM
To FGC <FGC@fgc.ca.gov>

Dear California,

I am writing to express my concern regarding the potential closure or restriction of sand bass fishing in California. As a passionate angler, business owner, and advocate for sustainable fishing practices, I believe maintaining access to this valuable fishery is essential for both recreational and economic reasons.

Sand bass fishing is a treasured activity for countless anglers in California, providing not only recreational opportunities but also supporting local businesses, including charter services, tackle shops, and tourism. Restricting or closing this fishery would have significant economic consequences for these industries while also diminishing a beloved pastime for many.

I understand the importance of preserving fish populations and ensuring sustainability for future generations. I encourage the use of science-based management practices, such as seasonal regulations, size limits, and catch quotas, to balance conservation efforts with continued access to this resource. Responsible anglers are committed to protecting marine ecosystems and working alongside regulatory agencies to ensure the health of fish populations.

I kindly ask that you consider the social, cultural, and economic impacts of any decisions regarding sand bass fishing in California. By implementing balanced and science-driven management measures, we can achieve sustainable use while preserving the opportunity for anglers and businesses to thrive.

Thank you for your time and attention to this matter. I would appreciate the opportunity to discuss this further or provide any additional input if needed.

Sincerely,
[Austin carter]
[REDACTED]



Outlook

Sand Bass

From Wendy Tochihara [REDACTED]

Date Mon 02/10/2025 04:52 PM

To FGC <FGC@fgc.ca.gov>

Dear Fish & Game Commissioners,

Please see my attached petition opposing a sand bass closure.

Wendy Tochihara

[REDACTED]

[REDACTED]

[REDACTED]

Sand Bass Closure

To: California Fish & Game Commission

We, the undersigned, oppose the closing of sand bass fishing during the summer months. This extreme response to the uncertain need goes well beyond being a reasonable response. We feel it primarily serves to support a narrative popular within the academic community that any fishing during spawning is a bad idea. The reality is a dead fish is a dead fish, irrespective of when during the year it dies. Most fish do not provide parental care to their offspring. Sport fishing does not disrupt spawning.

Why is this important?

Sand bass are important to recreational anglers, children, veterans and especially those with less disposable income. The food value of our catch subsidizes the costs involved. Many pier and jetty anglers depend on their catch for sustenance. Sand bass are a highly prized catch.

Signed by 715 people:

Name	Zip code
Wendy Tochihara	92649
Mark Rojas	91750
David Saraye	90504
Michael Brennan	94553
Valerie Handzus	90680
IZMIR MOOR	92584
Merit McCrea	93103-1948
Rene Johnson	92647
William Johnson	92647
Sam De La Torre	90717
nate karney	92078
Dean Plant	92627
Brian Nguyen	91780
Steve Kunitake	90745
Laurie Garcia	90746
Thomas Golding	90732
Chris Wheaton	90650
Hernan Hernandez	93436
Alistair Curamen	90807

Name	Zip code
John Santaella	95542
Ernest Prieto	92054
Norm Campbell	92040
Kambiz Moradi	91342
Paul Haase	92646
Sam Fallah	91342
Robyn Yoshihiro	91942
Frank Garibay	92708
Grant Hendricks	92647
Kenichi Iida	92610
Robert casler	92021
Johnny Javier	94528
David Mahosky	92399
Michael Wolowicz	92585
Michael McCarty	90742
Michael Nguyen	92337
Shawn Albayati	92801
Shannon Anderson	94558
Jim Hendricks	90242
Chinh Nguyen	92683
Sam Neely	91390
Thomas Fitzgerald	91701
David Rosenthal	91355
Marcel Sampaga	92111
Gary Bond	92344
larry overton	90712
Derek Amaral	90808
Ron Owens	92867
Serg Fainsztein	92627
Ron Okada	92630
Bobby Martinez	90065

Name	Zip code
Andre Logie	95991
Huan Nguyen	92840
Joseph Schlater	92626
Aren Antounian	91335
Bruce Tallmon	90815
Ronald Bader	92011
Phillip Capriccio	91770
Virgil sunny Perez	92628
Mathew Curto	93427
Jeff Laws	92065
Angela Knight	95540
Myles Blatt	90292
Sean Froelich	92845
Matt Kotch	92646
Victor Castillo	90270
Julia Orozco	90280
Bob Hoose	92626
Hawley Smith	90680
Randall Corbin	93003
Ryan fillingane	92833
Anthony Rezzato	90230
Robert Praszker	94941
Mary Thompson	93033
Avo Asdourian	92649
Steven Ennis	92069
Brian Wilson	92021
Michael Engle	90803
David Wolfson	84003
Steve Heath	90703
Tom Handzus	90680
Steve Nies	90815
Tony Kim	91316

Name	Zip code
Mark Dobrilovic	92692
Eric Torres	93117
David Dodge	90740
Enrique Mireles	92649
Mike Marsh	92646
Weston Rhodes	93433
brad sanders	93561
Mike reader	90501
Kevin Cooney	92707
Sean Fitze	93305
Steve Sproule	90720
Mike Armenta	93003
Kurt Gerum	92647
Brendyn Clark	93030
Javier Godinez	93036
Mitchell Oliveira	93292
Jose Ortega	90620
Adam Casillas	93035
Richard Diehl	86426
Alex Gallardo	93004
Raymond Karloovich	92801
Greg Herman	88012
Silvano Muñoz	92703
ROBERT ITO	90703
Kevin Abshear	90605
Bobby Matsumoto	92308
David Brinsko	89510
Mathee Toscano	90660
Matt Newman	91360
Cody Kramer	92071
Jenn Majdi	92647
Eric Mccully	92065

Name	Zip code
Brad Gamble	95401
Alan HERMER	92649
Martin Carbajal	93105
Luis Hernandez	93103
Eric Torres	93117
Gavin czach	93035
Michael Killian	91350
Daniel Rivas	93013
Robert Hara	90066
Diego Morales	93033
Theodore Ritter	93117
Ronnie Aguilera	92801
Richard Flores	93108
Randy Sasaki	93033
kurt bellefeuille	93117
Jerad Rohde	93036
John Lavarias	92683
Christopher Navarro	90277
Howell Poe	90803
Owen Scheid	93103
Gary Geer	90660
Dennis Yamamoto	90720-4136
Lance Huey	90630
Michael Campos	90242
Jorge Gonzalez	93035
Jonathan Edgar	90274
Greg Bohnet	90720
Arturo Soriano	91006
Peter Mirelez	90620-4104
Chris Chun	92835
Richard Sioson	90703
Oscar Ochoa	92407

Name	Zip code
George Vanneman	92376
Eddie Aguirre	92708
James LEAHY	90813
Martin Ayala	90018
Douglas Elliott	85048
James Cook	92345
Steve Iwashita	90502
Ka Mo	90620
Alisa Garrett	92592
Rich DeCoudres	90720
Steve Leavitt	92260
Nicholas Fischer	90712
Joel Arledge	92120
Richard Ableser	90803
Tetsuo Fujioka	93111
Roy Fukushima	92867
Jim Jarvis	92691
Luke Burson	92677
Sophia Huynh	91304-3626
Andrew M Shimoda	91748-4795
Rodney Fischer	92227
David Obenauer	92627
Cor Claus	92649
Gary Turner	92870
Harold Hanevik	92307
Steve Cameron	99006-9603
Susan Campbell	92040
Chris Schmidt	93010
Chris Halliday	92649
Denis Mantei	92663
Bruce Lindemann	92660

Name	Zip code
Kevin Perlin	90802
Ian Rimando	91350
Richard Davis	90220
Timothy Marquez	90731
Matt Matsuno	90606-1132
Joseph San Jose	90815
Joel Shimizu	91748
Robert Hetzler	92648
FRANK MORENO	90660
David Stone	90049
Chris Alcaraz	91722
Daniel Zuniga	90605
Roy Patterson	92691
alfred romo	93314
Fred Roberts	90242
James Bateman	92649-1803
Bob Bower	92609
Kevrette Johnson	90301
Dave Huebner	93109
John Trapani	92649
Jose Sandoval	90066
Jerry Velazquez	93033
Gary Mizuhara	91737
Brent Maynard	90717
Rick Peter	93110
Jason Palmieri	91942
Thomas Horne	93003
Derek Taguchi	92626
Dzung Duong	92782
Justin Wyndham	90712
Bob Miller	92630
Paul Mceachern	90803

Name	Zip code
Gustave Chabre	92661
Robert Woods	91755
JoAnne Naka	90505
Treve Bartlett	91731
Matthew Erny	90621
Kurt Schuster Kurt Schuster	92084
Andrew Anderson	92649
Luis Cervantes	90503
James Miltenberger	90606
Edwin Matibag	86324
Jeff Yoemans	91775
Ethan Hargett	90732
Robert Carlos Arriaga	92683
Jonathan Rohe	81521
Jan Packard	90274
daniel black	92649
Andrew Deal	92649
PAUL SOUTHGATE	90275
Dave Morin	93060
Daniel Lee	91709
darren Morris	92646
Matthew Groff	90245
Donald Watanabe	90744
Sergio Marquez	90703
David Cox	92887
Tim Ogilvie	92082
Matt Borgen	90720
Melvin Sanford	92139
Jesus Barrios Jesus Barrios	90813
Terry Tysseland	92648

Name	Zip code
Patricia Miltenberger	90606
John Maxwell	90740
Matthew Fitch	92399
Charlette Amaral	90808
Kevin Meyer	92054
David Smith	92648
Ricardo Fuentes	90501
Christopher Imbro	90717
steve hall	90620
Paul Ito	90247
Mark Thomann	92691
Richmond Cancino	90755
Ann Ito	90247
Jed Venture	90808
David Jew	91350
Gary Van Eede	90713
Tom Furukawa	90039
Tomas Gurklys	93551
Tom Farrell	93010
Gerry Quesnel	92841
Travis Iiyama	92054
Erik Mason	93022
Tyler Doan	92806
Greg Morey	90808
Larry Dickson	90732
Kristy Morey	90808
Sean Murphy	93003
Steven Childs	91010
STEVEN FARMER	90710-1213
Jeffrey Hacker	92646
Timothy Stengel	92117

Name	Zip code
Janette Fuson	92359
Joseph Fries	92359
Bentley Kerr	92602
Norman Rodriguez	90018
Casey Mccann	92626
Alejandro Orozco	92544
Greg Gin	90814
Tom Muehleman	92119
Steve Mccolley	92081
Christopher McClary	92627
Joel Quinonez	92071
Bryan Szal	93003
Kaleb Basilio	92010
Keith Hernandez	92704
John Mcvicars	92595
CHUCK KELMAN	91301
Paul Douglas	93111
Walter Buitrago	92833
Dwayne Patenaude	92071
Larry Heron	93010
Eddy Shook	92054
Steve Brunton	92071
Alan Ruud	92863-7233
Richard Buitrago	93238
Leonard Odum	92677
ALEJANDRO BUITRAGO	90404
Nicholas Ramirez	90250
Charles Wheeler	92110
Bill Varney	92647
Debra Patenaude	92071

Name	Zip code
bruce marshall	91977
Boon Fukumori	90703
Gary Mouritzen	92106
Robert Groeber	93041
Casey Casad	92064
JOSEPH JEFFREY	92845
Samuel Holt	90250
Rodney Aoto	90717
Roger Stephenson	91350
David Rehrer	92308
Chris Maudlin	91911
willie kim	92886
Brice Bossler	92107
Sam King	92019
Tamralyn Shepphird	93065
Peter Bovey	90066
Sammy Garcia	92704
Patrick Krogman	92708
dan clause	93103
Sunny Ton	91776
einar aguila	92113
Gerald Edwards	92123
Timothy Hunt	90650
Joseph Vicic	92649
Aaron Orsini	98223
Len Alfuentes	92126
Richard Jahn	90815
Jay Sklar	92057
Albert Lee	92882
Andrew Shuttleworth	92114
Henry Bouldin	92821

Name	Zip code
Mike Smith	94931
Joaquin Mccollum	91902
Stephen Hanano	92869
Clayton Silver	92660
Kyoko Dollar	92078
Warren Shuttleworth	92114
David Kodama	92129
Jonathan Gunther	91311
Gregory Cohan	91406
James Carlisle	90803
Todd Johnson	92626
Jacob Aho	92821
Matthew Finney	92595
Bryan Yamamoto	91754
Donald Fromberg	93010
Vincent Orsini	94923
Brandon Blakley	98223
pete jurczyk	93436
Dennis Friedman	92508
Adam Tucker	92688
Dane Freeland	92109
Bryan Freeland	92109-1405
Daniel Razo	93105
Margaret Temple	95608
Kyle Thomas	93035
Kit VanRiel	89081
Erik Mortenson	92882
Michael Kelly	95407
Robert Jenkins	92011
richard vantine	85367
Howard Folmer	90249
Andrew Ratzky	91302

Name	Zip code
Mark Suyetsugu	90230
Mark Romero	90063
Malachi Jones	92101
Chris Matthews	92660
Nichole Snorteland	98223
Richard Braswell	92604
Carlos Mosquera	92563
Kathleen Orsini	92106
Tim Joe	91320
Christina Cost	92024
Bryan Salvati	92591
Keith Lambert	90066
Tom white	92780
Randy Pauly	93420
Curtis Woolsey	92587
Stephanie McIntyre	98270
Zach Arnold	98201
Louis Mascola	90275
Rick Hausman	92009
randy jacobs	92065
karl h	95403
Blake Schoemann	93012
Jessica Huff	93001
Garrett Ching	90041
Leo Ruiz	90606
cody jeske	91790
David COOPMAN	92648
Javier Lazo	91767
Nathan Kolender	92117
Andrew Warren	92071
Joe Oyama	92111

Name	Zip code
Sean Hayes	93308
Daniel Jimenez	91801
James Jacobs	92126
Michael Howell	92844
Scott Willis	91942
PAUL ROMANOWSKI	92703
Michael Carrasco	95383
Alfred Edwards	92376
Ronald McMillian	89014
Sabrina Roncancio	95472
Rich Prater	92865
Chris Bragg	91932
Bill Boyce	91390
Paul Lombardo	90604
Patrick Antonius	92108
Bruce Freeman	91040
Scott McCall	92805
Tim Deveau	92571
Robert Gossett	92883
Christian Miner	90620
Cesar Zanelli	90731
Antonio Zanelli	90731
Sunny Trent	91902
Marcus Martinez	91786
Jodee Tochi	90623
James Stitt	93401
Eddie Azevedo	92111
john berner	92647
Amo Laupola	92584
David Grant	92057
john eddy	91701

Name	Zip code
Paul Weidmann	90703
Arnold Seko	92084
Hieu Vo	92692
Bill M	92082
Jenny Leung	92649
Vincent Ivcevic	92845
Rob Henson	90740
Bill Depriest	92660
Robert Williams	92109
Nathanael Verano	91104
Layne Uyeno	90038
James Mickelson	92009
Jeff Tom	91403
Steven Morris	93436
Stephen Loo	90631
Timothy Ayres	91411
Clifton Siebler	97870
Peggy Dodge	90740
Eric Ralls	91932-1212
Ned nakatsuka	92677
Terry Uchida	92024
Paul Pangan	90731
chris collins	93063
Albert Flores	90502
Kelli Capelouto	90731
Joey Engel	92675
Cory King	92029-4415
Keith Poe	90717
Harold Jacobson	92020
Bill Larkin	92649
Janine Curlee	92505
Georgia Oefinger	85207

Name	Zip code
Tim Dawson	86429
Bill Morris	92653
Rob Espinosa	92886
Bill Dean	92870
Silbermannn Bill	92345
Rachael Yamasaki	92128
Marshall Halperin	92691
Bruce Byrd	92703
Stacy McDannold	90064
John Bohrer	92653
Michelle Westcott	92882
Eric Ratliff	92129
Noe Sarmiento	92345
Alexandra Sarmiento	92345
Shawn McBride	92620
Brent Danna	92845
James Nelson	91911
Bill Cavanagh	90604
Bree Klusmeyer	92081
Wendi Brownell	93105
Sienns Berrocal	60618
Wanda Maclachlan	92055
Nicholas Johnston	92509
Jacob Martinez	91741
Mike Muellenberg	92648
Raul Lira	92107
Julie Hand	92083
Josiah Vander Poorten	91773
Kat Dumalski	90808
Kurt van der Linde	92677

Name	Zip code
Gary Brennan	92065-6408
Eddie Agundez	23570
John Otten	91784
Adam Verdugo	91750
Donna Kalez	92629
Lisa Phillips	92672
Michael Hansen	92672
Shane Hansen	92673
Laura Lopez	92705
Sean Healey	92648
Cole Taite	92648
Ryan Burson	92692
Justin McTeer	90605
Emil Beaird	90303
Miguel Virrueta	91744
Stan Vanderburg	93065
Benny Hallock	92627
Ken Vanderburg	91311
Nohl Almquist	92646
Marshall McCabe	92646
Jose Angulo	92630
Ryan McTeer	90603
Steven Karobkoff	91367
Miguel Pichardo	90003
Daniel Rivas	90631
Steven Gelhaus	34986
Sally Kurz	92677
Richard Kemler	91910
Scott Smith	92586
Doug Book	86303
Carhy Doesburg	93673
Joe Sotelo	90003

Name	Zip code
Robert Polzel	89122
Joel Salloway	90731
Calvin Deshler	93111-1450
Justen Giles	90806-3165
Victor Alarcon	90670
Tristan Burke	90745
Art Omar Quezada	92584
Salvador Jeronimo	90807
capt Michael w brown	90814
Stew Suenaga	90025
Gabriel Hernandez	90602
Randy Benner	92336
Kevin Munoz	91303
David Peter	92672
Peter Groesbeck	92128
Ryan Cowan	92708
Jaime cell128@yahoo.c om	90810
ben okazaki	91754
Lorenzo Masciel	92805
Matthew McDonald	90808
Ashby Hurtado	90002
Peter Harris	91911
Mike Blom	92507
Susan Teague	91910
Whitney Uyeda	93427
Michael Fontana	92691
Rayne Pulmano	90630
Thomad Chavez	92117

Name	Zip code
Elsie Gamboa	92346
Raymond Chiu	91792
Steve Dillingham	92020
Christopher Hacker	95918
Paul Schlingensiepen	93117
Howard Hada	90703
Michael Stout	90503
Kenji Aoki	90703
Keith Kawata	90504
Robert Kolb	92843
Jack raub	92673
Derek Alward	92675
james skeen	92505
Darryl Oku	96822
Brian Drazba	92656
Brendan Hanley	92679
Tonie Bangos	92124
Mercedes Gonta	90803
Robert Villar	90803
Chris Keisler	92056
Dale Kurata	90701
Steven Stern	91303
larry huey	90266
Robert Cox	91911
James Duntley	90275
Jesse Perez	90706
Chris Silva	92506
Mary DiStefano	92672
Jason Castaneda	92064
De Nguyen	92844-2415
Andrew Wright	92110

Name	Zip code
David Brackmann	92649
Nicholas Ekdahl	91741
micah DiStefano	92672
Leo B	92661
Bernie Cervizzi	92020
franklin pratto	90005
Robert Calderon	90503
Louis Almeida	92078
James Johnson	92117
Steven Villa	90250
John Campbell	93455
Darryl Despie	92027
Samuel Fox	92083
Benson Fox	92083
Kevin Doyle	92708
Rose OBrien	90630
YOFAN GANTINO	91784
Sammy Prum	92807
Michael Yunich	92651
Chuy Peraza	90019
Alexandria Fox	92108
Taryn FRANDSEN	92081
Devin Feldman	92630
Alexis Siebelink	92083
LeeAnn Fox	92083
John Siebelink	92083
Francisco Bravoderueda	92504
Margaret Luikart	85364
Gerado Ixta	92780
Olivia Fox	92083
Joe Duval	90650
James McGinness	90620

Name	Zip code
Aaron hoberman	95726
Brian Siwecki	92678
Larry Crownover	92841
Tim Jarrett	92708
Loi Hua	91770
Blaine Doss	92407
Brandon McNaughton	92708
Darren Daskocil	92585
Victor Jarrett	92708
Dave Cherman	92691
Alex Selman	92103
Darren Clark	91350
Gary Cotter	93105
Bradley Bryant	92886
Rick Maurer	92869
Michael Pivovaroff	91745
Glenn Woodrum	92807
Adam Weinberg	93117
John Hochadel	90605
Don Girskis	92672
Jeffrey Kaiser	92026
Cody Noble	91941
Joe Dopico	91354
Gene Tanji	92804
Cliff Bongiani	92120
Dylan Legere	92627
Jose Vargas	92024
Ryan Tracey	92109
Dean McVey	91724
Max Vandermeulen	92646
joel howard	92007

Name	Zip code
Mark Juarez	92113
Kirk Johnson	92028
Nathan Winton	93003
Kent Franke	92056
Jim Markham	90630
Jose Govea	91741-2124
Glen Mitchell	91016
Brian Petersen	91016
Coleman Mitchell	91016
Tyler Mitchell	91016
kelly smith	90742
Jack Vandermeulen	92646
Cole Kurimay	92879
Jake Kress	92649
Bradley Kreowski	92672
Matt Ryan	90713
Julian Vazquez	90503
Duran Salazar	92646
Wesley Alden	90505
Garett Yamaki	90249
David Chong	92835
Michael Wirasto	90277
Elijah Keane	92882
Eric Rosso	97478-9575
Terence Kirk	90291
Anthony Daquila	92647
Dan Sukal	90504
Christopher Turk	91775
Doug Snell	92592
Anthony Amoroso	92105
Roland Salazar	92879
Eddie Meyer	91730

Name	Zip code
Judith Simmons	90503
Jared Walker	90815
Morgan Hall	91326
trent Soudipour	92806
Theresa Hew	90807
Michael DAquila	92010
Jeremy Roberts	91737
Allen Anderson	93003
James Trotter	93455
Rita Ringer	90706
Mark Trotter	93455
Michael Torres	90631
Robert Zika	92882
William O'Connell	92011
Michael Craven	92010
David Swing	91762
west reese	92150
David Bennett	91910
Jason Schulte	92630
Matt Sumpter	93465
Roberto Dominguez	92706
David Gallagher	90036
James Kelley	91941
Sean Doyle	92054
Andrew Martinez	90604
Kyle Yearsley	90808
Adam Toledo	91724
Jack Kaneoka	92821
Jesse Link	90717
Michael Aguila	90706
Giovanni Estrada	90805
Bobby Mcdonald	93455

Name	Zip code
owen abbott	93012
Eric Simpson	92870
Ethan Link	90717
Sean MacNeil	92626
Luis Flores	91761
Don Salveson	91364
Alexis meza	90810
Harry Markarian	91364
Justin Arnold	93023
John Tashdjian	91423

Sincerely,

Dear Members of the California Fish and Game Commission,

1/26/25

I am writing to express my deep concerns regarding the potential establishment of a no-take season for barred sand bass fishing from June 1 to August 31, as reflected in the proposed amendment to Section 28.30, item 23 on the agenda for the February 13, 2025, meeting of the California Fish and Game Commission meeting. After reviewing the information available, I believe the decision lacks sufficient scientific basis and fails to consider the broader ecological, social, and economic implications. I respectfully urge the Commission to avoid a no-take season for barred sand bass based on the following points:

1. **Catch Rates Are Not Indicative of Species Decline:** Catch rates alone should not be used as a definitive indicator of population health. Many anglers and sport fishing operators have shifted their focus to other species, such as bluefin tuna, which have become increasingly abundant during much of the fishing season. This shift in effort has likely contributed to the perceived decline in barred sand bass catches and does not necessarily reflect an actual reduction in the population.
2. **Lack of Recent Stock Assessments:** There has been no recent comprehensive stock assessment of barred sand bass to determine the current state of the population. Without updated and rigorous scientific data, any regulatory action risks being based on outdated or incomplete information. A thorough stock assessment should be conducted before imposing a zero-take season for barred sand bass.
3. **Failure to Acknowledge Migratory Behavior:** Reports from the California Department of Fish and Wildlife (CDFW) do not adequately reflect the migratory nature of barred sand bass. These fish are known to move between habitats and regions, making localized data potentially misleading. A broader and more nuanced understanding of their migratory patterns is essential for informed management decisions, especially as drastic as the creation of a zero-take season.
4. **Disproportionate Impact on Disadvantaged Anglers:** A no-take season for barred sand bass would disproportionately affect disadvantaged and underprivileged anglers, as well as tribal communities, who rely on nearshore species for accessible and affordable recreational fishing opportunities. barred sand bass is a key species for these communities, offering a vital connection to the outdoors, providing a subsistence food source, and fostering a love for fishing that transcends economic barriers.
5. **Barred Sand Bass is a Gateway Fish:** Barred sand bass play a crucial role as a gateway species for young and novice anglers in the saltwater recreational fishing community. These easy-to-catch fish offer an accessible and rewarding experience that fosters a lifelong appreciation for marine ecosystems and a love for the ocean. Eliminating access to this species with a no-take season could diminish participation in the sport and future sales of fishing licenses, particularly among younger generations, impairing success of the 3Rs program (Recruit, Retain and Reactivate).
6. **Economic Contributions of Sport Fishing:** The recreational fishing industry is a significant contributor to California's economy, generating billions of dollars annually and supporting thousands of jobs. A no-take season for barred sand bass could have a cascading negative impact on the sport-fishing sector, including tackle shops, charter boats, and tourism-dependent businesses. It is crucial to weigh the economic consequences of this potential closure against its purported ecological benefits.

In conclusion, I urge the California Fish and Game Commission to prioritize updated scientific research and stakeholder input before establishing a no-take for barred sand bass. Collaborative efforts between the Department of Fish and Wildlife and stakeholders such as anglers, charter captains, scientists and eNGOs can lead to more balanced and effective conservation solutions that protect marine resources while preserving access and opportunities for California's diverse fishing community. Thank you for considering my comments. I appreciate the Commission's dedication to sustainable fisheries management.

Sincerely,



Dear Members of the California Fish and Game Commission,

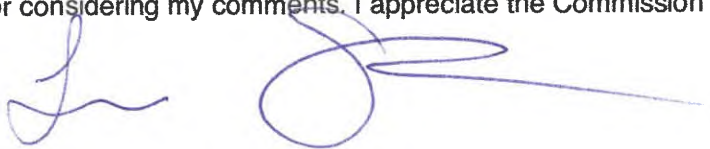
1/24/25

I am writing to express my deep concerns regarding the potential establishment of a no-take season for barred sand bass fishing from June 1 to August 31, as reflected in the proposed amendment to Section 28.30, item 23 on the agenda for the February 13, 2025, meeting of the California Fish and Game Commission meeting. After reviewing the information available, I believe the decision lacks sufficient scientific basis and fails to consider the broader ecological, social, and economic implications. I respectfully urge the Commission to avoid a no-take season for barred sand bass based on the following points:

1. **Catch Rates Are Not Indicative of Species Decline:** Catch rates alone should not be used as a definitive indicator of population health. Many anglers and sport fishing operators have shifted their focus to other species, such as bluefin tuna, which have become increasingly abundant during much of the fishing season. This shift in effort has likely contributed to the perceived decline in barred sand bass catches and does not necessarily reflect an actual reduction in the population.
2. **Lack of Recent Stock Assessments:** There has been no recent comprehensive stock assessment of barred sand bass to determine the current state of the population. Without updated and rigorous scientific data, any regulatory action risks being based on outdated or incomplete information. A thorough stock assessment should be conducted before imposing a zero-take season for barred sand bass.
3. **Failure to Acknowledge Migratory Behavior:** Reports from the California Department of Fish and Wildlife (CDFW) do not adequately reflect the migratory nature of barred sand bass. These fish are known to move between habitats and regions, making localized data potentially misleading. A broader and more nuanced understanding of their migratory patterns is essential for informed management decisions, especially as drastic as the creation of a zero-take season.
4. **Disproportionate Impact on Disadvantaged Anglers:** A no-take season for barred sand bass would disproportionately affect disadvantaged and underprivileged anglers, as well as tribal communities, who rely on nearshore species for accessible and affordable recreational fishing opportunities. barred sand bass is a key species for these communities, offering a vital connection to the outdoors, providing a subsistence food source, and fostering a love for fishing that transcends economic barriers.
5. **Barred Sand Bass is a Gateway Fish:** Barred sand bass play a crucial role as a gateway species for young and novice anglers in the saltwater recreational fishing community. These easy-to-catch fish offer an accessible and rewarding experience that fosters a lifelong appreciation for marine ecosystems and a love for the ocean. Eliminating access to this species with a no-take season could diminish participation in the sport and future sales of fishing licenses, particularly among younger generations, impairing success of the 3Rs program (Recruit, Retain and Reactivate).
6. **Economic Contributions of Sport Fishing:** The recreational fishing industry is a significant contributor to California's economy, generating billions of dollars annually and supporting thousands of jobs. A no-take season for barred sand bass could have a cascading negative impact on the sport-fishing sector, including tackle shops, charter boats, and tourism-dependent businesses. It is crucial to weigh the economic consequences of this potential closure against its purported ecological benefits.

In conclusion, I urge the California Fish and Game Commission to prioritize updated scientific research and stakeholder input before establishing a no-take for barred sand bass. Collaborative efforts between the Department of Fish and Wildlife and stakeholders such as anglers, charter captains, scientists and eNGOs can lead to more balanced and effective conservation solutions that protect marine resources while preserving access and opportunities for California's diverse fishing community. Thank you for considering my comments. I appreciate the Commission's dedication to sustainable fisheries management.

Sincerely,



Dear Members of the California Fish and Game Commission,

Jan 26, 2025

I am writing to express my deep concerns regarding the potential establishment of a no-take season for barred sand bass fishing from June 1 to August 31, as reflected in the proposed amendment to Section 28.30, item 23 on the agenda for the February 13, 2025, meeting of the California Fish and Game Commission meeting. After reviewing the information available, I believe the decision lacks sufficient scientific basis and fails to consider the broader ecological, social, and economic implications. I respectfully urge the Commission to avoid a no-take season for barred sand bass based on the following points:

1. **Catch Rates Are Not Indicative of Species Decline:** Catch rates alone should not be used as a definitive indicator of population health. Many anglers and sport fishing operators have shifted their focus to other species, such as bluefin tuna, which have become increasingly abundant during much of the fishing season. This shift in effort has likely contributed to the perceived decline in barred sand bass catches and does not necessarily reflect an actual reduction in the population.
2. **Lack of Recent Stock Assessments:** There has been no recent comprehensive stock assessment of barred sand bass to determine the current state of the population. Without updated and rigorous scientific data, any regulatory action risks being based on outdated or incomplete information. A thorough stock assessment should be conducted before imposing a zero-take season for barred sand bass.
3. **Failure to Acknowledge Migratory Behavior:** Reports from the California Department of Fish and Wildlife (CDFW) do not adequately reflect the migratory nature of barred sand bass. These fish are known to move between habitats and regions, making localized data potentially misleading. A broader and more nuanced understanding of their migratory patterns is essential for informed management decisions, especially as drastic as the creation of a zero-take season.
4. **Disproportionate Impact on Disadvantaged Anglers:** A no-take season for barred sand bass would disproportionately affect disadvantaged and underprivileged anglers, as well as tribal communities, who rely on nearshore species for accessible and affordable recreational fishing opportunities. barred sand bass is a key species for these communities, offering a vital connection to the outdoors, providing a subsistence food source, and fostering a love for fishing that transcends economic barriers.
5. **Barred Sand Bass is a Gateway Fish:** Barred sand bass play a crucial role as a gateway species for young and novice anglers in the saltwater recreational fishing community. These easy-to-catch fish offer an accessible and rewarding experience that fosters a lifelong appreciation for marine ecosystems and a love for the ocean. Eliminating access to this species with a no-take season could diminish participation in the sport and future sales of fishing licenses, particularly among younger generations, impairing success of the 3Rs program (Recruit, Retain and Reactivate).
6. **Economic Contributions of Sport Fishing:** The recreational fishing industry is a significant contributor to California's economy, generating billions of dollars annually and supporting thousands of jobs. A no-take season for barred sand bass could have a cascading negative impact on the sport-fishing sector, including tackle shops, charter boats, and tourism-dependent businesses. It is crucial to weigh the economic consequences of this potential closure against its purported ecological benefits.

In conclusion, I urge the California Fish and Game Commission to prioritize updated scientific research and stakeholder input before establishing a no-take for barred sand bass. Collaborative efforts between the Department of Fish and Wildlife and stakeholders such as anglers, charter captains, scientists and eNGOs can lead to more balanced and effective conservation solutions that protect marine resources while preserving access and opportunities for California's diverse fishing community. Thank you for considering my comments. I appreciate the Commission's dedication to sustainable fisheries management.

Sincerely,

A handwritten signature in black ink, appearing to be 'J. M. I.', written in a cursive style.



April 3, 2025

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Submitted via email to fgc@fgc.ca.gov

RE: Item 23. Recreational take of barred sand bass

Dear President Zavaleta and Honorable Commissioners:

On behalf of our recreational fishing community, Fish On would like to express our concerns about the health and status of the barred sand bass fishery in Southern California. As you know, we are a leading voice in ocean justice and equitable access issues for subsistence and recreational fishing communities in California and across the United States. We are founded, run and informed by anglers and spearfishers who financially support our efforts at a grassroots level, in addition to small grants which we solicit. Earth Island Institute acts as our fiscal sponsor, where they receive a small percentage of the funds we raise to provide organizational support and so we can more efficiently share capacities among other small organizations under their umbrella. To support Fish On's community who are regularly un- or under-represented in fishery management, we hope you will implement a meaningful regulation change for our beloved barred sand bass fishery. **We want to rebuild this fishery so it is viable and sustainable for generations to come; a seasonal closure and bag limit reduction is critically necessary and supported by data, science and our recreational fishing community.**

Fishery management is a data-limited practice and near-shore species tend to be the most data-limited, further marginalizing and risking the health of shore-based and subsistence angling communities. For barred sand bass however, there is a considerable amount of sound, credible data, study and science—and lessons learned from the last regulatory change—pointing to the critical necessity of a seasonal closure to ensure a future for barred sand bass. Failure to do so will not only ignore an opportunity to support everyday anglers but would also set a dangerous precedent of ignoring the California Department of Fish and Wildlife's own science in favor of commercial interests.

There are multiple data sources—catch rates, tagging data, larval data, hydroacoustic data, subtidal surveys, recruitment data and environmental data—that confirm the critical state of the barred sand bass population and show that the current recruitment pulse, alarmingly, has no additional pulses

behind it.¹ Our own experiences on the water, plus well-documented and credible reports, corroborate the existence of spawning aggregations and that they are heavily targeted.² No fishery can be sustainably fished when spawning aggregations are easily targeted and aren't protected. We must take action to protect the current spawning stock or we will likely face another fishing-induced collapse.

Fish On supports the original recommendation for a June - August seasonal closure to protect spawning aggregations of barred sand bass, and a two fish bag limit the remaining months of the year; noting our input was not considered in the working group discussions that amended this originally proposed regulation change. When barred sand bass regulations are revisited in 2028 and if there is evidence of recovery and recruitment, many members of our community have expressed support for slot limits in addition to appropriate bag limits to enhance barred sand bass fishing and conservation. We hope CDFW will take this into account with ongoing research and monitoring and, if feasible and scientifically-sound, consider how slot limits could support a sustainable sand bass fishery in future regulatory change recommendations.

There is no normal anymore—with climate change, management of marine fisheries will carry more risk. We must take a more precautionary approach to fishery management or the environment will set limits for us. Waiting for science to conclusively prove the need for conservation is not only inconsistent with the Marine Life Management Act³ but may put us on a path from which we cannot ever recover a fishery. As fishers and stewards of the ocean, we are committed to reducing our impact and allowing species to recover when needed.

We can easily adapt to a seasonal closure. We cannot undo the loss of another fishery.

Respectfully,



Anupa Asokan
Founder and Executive Director
Fish On



Brenton Spies, PhD
Research Scientist and Fisherman
CSU, Channel Islands

¹ Allen, L.G., Won, C., Bolser, D.G. and Erisman, B.E., 2020. Feasibility of hydroacoustic surveys of spawning aggregations for monitoring Barred Sand Bass populations off southern California. *Calif Fish Wildl*, 106, pp.139-155.; Davis, J.P., Valle, C.F., Haggerty, M.B. and Gliniak, H.L., 2019. Comparing video and visual survey techniques for Barred Sand Bass in rocky reef ecotone habitats. *California Fish and Game*, 105(4), pp.233-253.; Mason, E.T.J., Riecke, T.V., Bellquist, L.F., Pondella II, D.J. and Semmens, B.X., 2024. Recruitment limitation increases susceptibility to fishing-induced collapse in a spawning aggregation fishery. *Marine Ecology Progress Series*, 738, pp.203-224.

² Allen, L.G., 2010. The impact of intense recreational fishing pressure on spawning aggregations of barred sand bass (*Paralabrax nebulifer*) off the Los Angeles Metropolitan Area.; Jarvis, E.T., Linardich, C. and Valle, C.F., 2010. Spawning-related movements of barred sand bass, *Paralabrax nebulifer*, in southern California: interpretations from two decades of historical tag and recapture data. *Bulletin, Southern California Academy of Sciences*, 109(3), pp.123-143.

³ CDFW Marine Life Management Act Summary: <https://wildlife.ca.gov/Conservation/Marine/MLMA>

Two Letters for FGC April 16-17 Meeting

From Katie O'Donnell [REDACTED]
Date Thu 04/03/2025 02:46 PM
To FGC <FGC@fgc.ca.gov>
Cc Zoe Collins <[REDACTED]>

Hello,

I hope this email finds you well!

Please see the attached two comment letters from NGOs related to agenda items for the upcoming FGC meeting on April 16-17. One is a letter about FGC public comment and the other is about barred sand bass management.

As always, please feel free to reach out if you have any questions or would like to discuss in more detail. We appreciate your work and consideration of these comments!

Thank you,
Katie

--



Katie O'Donnell

US Ocean Conservation Manager

she/her/hers



[DONATE TODAY!](#)



April 3, 2025

California Fish and Game Commission
Marine Resources Committee
P.O. Box 944209
Sacramento, CA 94244-2090

Submitted electronically to fgc@fgc.ca.gov

RE: Item 23. Recreational take of barred sand bass

Dear President Zavaleta and Honorable Commissioners:

Following discussion at the February 13, 2025 California Fish and Game Commission (FGC) meeting on the consideration of amendments to the recreational barred sand bass fishery, our organizations are deeply concerned about the devaluation of science in guiding management decisions. Such a way of governing a public trust resource is inconsistent with the FGC Mission Statement and the Marine Life Management Act (MLMA).

Over the past several months, the proposed changes in recreational take for the barred sand bass fishery changed from the original California Department of Fish and Wildlife (CDFW) recommendation of a maximum of two fish from September - May and a seasonal closure from June - August to a symbolic gesture that will have little positive impact on the resource. Anecdotal accounts can be valuable, but cannot replace science assessments across time and geography. Not applying and utilizing CDFW's own research data and that of the scientific experts on the barred sand bass working group will set a dangerous precedent—barred sand bass management should not reject the CDFW's data and the best available science. We recognize the

amount of work that the Department spends on its data collection and recommendations, and request that scientific expertise be given weight.

The presumption that disposing of a precautionary approach in the short term will be better for the resource in the long term is not supported by science. A method of decision making in which the desire to maintain social capital and trust with a portion of the fishing fleet overrides the conservation benefits to a depleted fishery and prioritizes the interests of one extractive stakeholder group over the resource itself, the interests of other recreational fishers (including future generations), and California's millions of non-consumptive ocean users is unjust. There is a risk that ignoring science now will compromise the Commission's ability to sustainably manage future fisheries resources by eroding public trust in the management process.

Fishery management is inherently data-limited. Historically, California has been a global leader in marine resource management by applying credible scientific data to inform decision-making. The MLMA requires that marine living resources "...be managed sustainably and on the basis of the best available scientific information".¹ Rather than assuming that exploitation should continue until damage is statistically detectable, the MLMA shifts the burden of proof toward demonstrating that fisheries and other activities *are* sustainable.² Given the substantial information on barred sand bass provided by CDFW and through external scientific experts, we encourage you to take a scientific approach to rebuilding the barred sand bass population. Doing otherwise risks sacrificing long-term health for short-term gains, and acting against the MLMA's underlying goal of sustainable management.³

The MLMA states that marine life need not be consumed to provide important benefits to people, including aesthetic and recreational enjoyment as well as scientific study and education.⁴ It is important to consider the long-term health of this species for all coastal communities, and the opportunity for this fishery to benefit all types of anglers into the future – not just those speaking for commercial interests.

Sincerely,

Katie O'Donnell
US Ocean Conservation Manager
WILDCOAST

Ashley Eagle-Gibbs

¹ MLMA, FGC Code Section 7050 b(6)

² California Department of Fish & Wildlife, [Marine Life Management Act](https://wildlife.ca.gov/Conservation/Marine/MLMA) Summary, <https://wildlife.ca.gov/Conservation/Marine/MLMA>

³ MLMA, FGC Code Section 7050 b(2)

⁴ MLMA, FGC Code Section 7050 b(3)

Executive Director
Environmental Action Committee of West Marin

Sandy Aylesworth
Director, Pacific Initiative
Natural Resources Defense Council

Rikki Eriksen, Ph.D.
Marine Scientist
California Marine Sanctuary Foundation

Tomas Valadez
CA Policy Manager
Azul

Laura Deehan
State Director
Environment California Research and Policy Center

Zoë Collins
Marine Protected Area Program Coordinator
Heal the Bay

Memorandum

Date: March 10, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Agenda item for April 16-17 2025, Fish and Game Commission Meeting Re: Receipt of the Draft Market Squid Fishery Management Plan Amendment**

The Department of Fish and Wildlife (Department) is submitting a Draft Amendment to the California Market Squid Fishery Management Plan (Market Squid FMP) to the California Fish and Game Commission (Commission) for receipt at its April meeting.

In 2023, the Department convened a new Squid Fishery Advisory Committee (SFAC) that was charged with reviewing the fishery and advising the Department on potential changes to California market squid fishery management. The amended Market Squid FMP includes information from the Market Squid Enhanced Status Report, SFAC recommendations to proposed management measures, and other updated information regarding market squid.

Receipt of the Market Squid FMP by the Commission in April will allow for discussion at the June 11-12, 2025, meeting and potential adoption of the Market Squid FMP at the August 13-14, 2025, meeting.

If you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager at (916) 215-9694.

Attachment:

Draft Market Squid, *Doryteuthis (Loligo) opalescens*, Fishery Management Plan – Amendment 1

cc: Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman, D. Env., Regional Manager
Marine Region

Eric Kord, Assistant Chief
Law Enforcement Division

Melissa Miller-Henson, Executive Director
Fish and Game Commission
March 10, 2025
Page 2

John Ugoretz, Environmental Program Manager
Marine Region

Susan Ashcraft, Marine Advisor
Fish and Game Commission

Market Squid, *Doryteuthis (Loligo) opalescens*, Fishery Management Plan – Amendment 1



California Department of Fish and Wildlife Marine Region

XXX, 2025



Executive Summary

The Amended Market Squid Fishery Management Plan (MSFMP A-1) is presented in five chapters. Chapter 1 describes the plan's purpose, need, and consistency with the Marine Life Management Act (MLMA). Chapter 2 describes the species and fishery. Chapter 3 provides the framework for management, including control rules, and limits on fishing and the fishery. Chapter 4 includes the scientific basis for management as well as ongoing and planned research to support management. Chapter 5 provides information on anticipated future needs to ensure the fishery remains sustainable.

The market squid (*Doryteuthis (Loligo) opalescens*) fishery is one of the most important in the State of California in terms of total landings and revenue. The fishery generates tens of millions of dollars to the state annually from domestic and foreign sales. In addition to supporting the commercial fishery, the market squid resource is an important forage item for seabirds, marine mammals, and other fish taken for commercial and recreational purposes. Market squid is also used by the recreational fishery as bait.

In 1997, the Legislature approved Senate Bill (SB) 364 (Sher), Chapter 785, Statutes of 1997, which established a moratorium on new vessels entering California's commercial market squid fishery. The initial three-year moratorium placed a cap on the number of vessels in the squid fishery, established a \$2,500 permit fee to fund a California Department of Fish and Wildlife (Department) study of the fishery, and provided the Fish and Game Commission (Commission) with interim regulatory authority over the fishery for the duration of the moratorium. As part of SB 364, a Squid Fishery Advisory Committee, made up of resource stakeholders, and a Squid Research Scientific Committee, consisting of many of the world's leading squid fishery scientists, were established to advise the Director of the Department (Director) on recommendations for squid conservation and management and to provide input on the development of research protocols.

In 2001, the Legislature approved SB 209 (Sher), Chapter 318, Statutes of 2001, which established permanent management authority of the market squid fishery to the Commission. The statutes also require the Commission to manage the squid fishery under the guidelines set forth by the MLMA.

The goals of the MSFMP A-1 are to manage the market squid resource to ensure long-term resource conservation and sustainability, and to maintain a framework for management that is responsive to environmental and socioeconomic changes. The MSFMP A-1 establishes the management

program for California's market squid fishery and procedures by which the Commission manages the market squid resource.

Market squid fishery management is based on four management components: 1) fishery control rules, 2) a restricted access program, 3) environmental considerations including a seasonal closure area for seabirds and 4) administrative items. The management components in the original Market Squid Fishery Management Plan (MSFMP), adopted by the Commission in 2004 and implemented in 2005, are amended here, following a review conducted by a Squid Fishery Advisory Committee (SFAC) convened by the Department in 2023 to 2024. These amendments are intended to ensure the continued sustainability of this fishery into the future.

The MSFMP A-1 includes the following management components, implemented through Commission regulations where necessary. Changes to management components from the original MSFMP are shown parenthetically in **bold**:

Fishery Control Rules

- A seasonal catch limitation of 118,000 tons **(unchanged)**;
- Full fishery closures from 0700 Friday to noon Sunday from the U.S.-Mexico border to the California-Oregon border; and from 0700 Friday to midnight Sunday between a line due west from Point Lobos (36° 31.461' North Latitude) and a line due west from Pigeon Point (37 ° 11.000' North Latitude) **(originally noon Friday to noon Sunday statewide)**;
- Squid fishery monitoring programs (biological monitoring and logbooks, **unchanged**);
- Regulations that require possession of a valid market squid fishery permit to take squid commercially but do not require a squid permit when fishing for live bait **(unchanged)**;
- Squid lighting wattage limits (maximum of 30,000 watts) and shielding regulations that require the lower edges of the lighting shields be parallel to the deck of the vessel **(unchanged)**;
- A requirement that all round haul nets used to take market squid or onboard vessels taking or possessing market squid have a soft (non-metallic) rib line and rope used to purse the net to reduce the potential for bottom contact **(new requirements, not previously included)**.

Restricted Access Program

- A vessel-based capacity goal for the market squid fishery that produces a moderately productive and specialized fleet (55 vessels and 34 light boats, 18 brail vessels, **unchanged**);
- Annual permit fees starting at (and adjusted annually for inflation, **unchanged**):
 - Transferable Market Squid Vessel Permit: \$2000;
 - Non-transferable Market Squid Vessel Permit: \$1000;
 - Transferable Market Squid Brail Permit: \$2000;
 - Non-transferable Market Squid Brail Permit: \$1000;
 - Transferable Light Boat Permit: \$600;
- Full transferability of Market Squid Vessel Permits based on comparable capacity (within 10%); establish transferability of Market Squid Vessel Permits to a vessel of larger capacity under a “2 for 1” permit retirement (**unchanged**);
- Full transferability of Market Squid Brail Permits based on comparable capacity (**unchanged**);
- Full transferability of Market Squid Light Boat Permits and establish an upgrade from a Market Squid Light Boat Permit to a Transferable Market Squid Brail Permit on a “1 for 1” permit retirement;
- An initial transfer fee at \$500, and an upgrade fee of \$1500 (**unchanged**);

Environmental Considerations

- Seasonal Closures for Seabirds: Squid may not be taken using attracting lights in all waters of the Greater Farallones National Marine Sanctuary at any time (**unchanged**);
- The expanded fishery closure from 0700 Friday to midnight Sunday between a line due west from Point Lobos (36° 31.461' North Latitude) to a line due west from Pigeon Point (37 ° 11.000' North Latitude) (**originally noon Friday to noon Sunday statewide**).
- A requirement that all round haul nets used to take market squid or onboard vessels taking or possessing market squid have a soft (non-metallic) rib line and rope used to purse the net to reduce the potential for bottom contact (**new requirements, not previously included**).

Administrative Items

- The Director may establish an advisory committee for the squid fishery, which may include scientific, environmental, or industry representatives (**unchanged**).

- The MSFMP A-1 will be reviewed periodically to ensure the fishery remains sustainable and recommend any necessary changes to the management framework or regulations **(unchanged)**.

The MSFMP A-1 utilizes a framework composed of several elements that will allow the Commission to react quickly to changes in the market squid population off California without the need for a full amendment and provides the Commission specific guidelines for making management decisions. Guidelines provided by the MSFMP A-1 will allow for other management strategies, should they become necessary, which would effectively achieve the goals and objectives of the MSFMP A-1 and MLMA. Since market squid is included in the Federal Coastal Pelagic Species Fishery Management Plan (CPS FMP), the MSFMP A-1 framework structure is consistent with management by the Pacific Fishery Management Council outlined in the CPS FMP.

Table of Contents

Executive Summary	i
Table of Contents	5
Acknowledgements.....	10
Chapter 1. Introduction	1-1
1.1. Purpose and Need for Action	1-1
1.1.1. Problem Statement.....	1-1
1.1.2. Rationale for MSFMP Review	1-3
1.1.3. Location and General Characteristics of the Project Area	1-4
1.2. The Marine Life Management Act.....	1-4
1.2.1. MLMA Master Plan	1-7
1.2.2. Enhanced Status Reports	1-8
1.3. Specific Goals and Objectives of the Market Squid Fishery Management Plan	1-8
1.3.1. Goals:	1-8
1.3.2. Objectives:.....	1-8
1.4. Constituent Involvement	1-9
1.4.1. Involvement in the Original 2005 FMP Development	1-9
1.4.2. Involvement in the FMP Review	1-11
1.5. The Structure of the Market Squid Fishery Management Process under the Marine Life Management Act.....	1-11
1.5.1. Process of Plan Review	1-12
1.6. Authority and Responsibility	1-16
1.6.1. California Environmental Quality Act.....	1-17
1.6.2. Functional Equivalent	1-18
1.6.3. MSFMP Environmental Document	1-19
1.6.4. Federal Law	1-19
1.6.5. State Management of Market Squid	1-20
Chapter 2. Background: A Description of the Species, the Fishery, and Social and Economic Components of the Market Squid Fishery	2-1
2.1. Species Description.....	2-1

2.2.	Range, Distribution, and Migration	2-1
2.3.	Age and Growth	2-2
2.4.	Reproduction, Fecundity, and Spawning Season	2-4
2.5.	Natural Mortality	2-6
2.6.	Associated Species	2-7
2.7.	Predator/Prey Relationships	2-8
2.7.1.	Market Squid as Predators	2-8
2.7.2.	Market Squid as Forage	2-8
2.7.3.	Competition	2-12
2.8.	Critical Habitat	2-12
2.9.	Status of the Stocks	2-13
2.10.	Areas Involved	2-15
2.11.	History of Exploitation	2-15
2.11.1.	Description of User Groups	2-17
2.11.2.	Fishing Effort	2-21
2.12.	Fishery Impacts	2-26
2.13.	Social and Economic Characteristics of the Market Squid Fishery	2-30
2.14.	Location of the Fishery	2-33
2.15.	History of Conservation and Management Measures	2-36
2.15.1.	State Management	2-36
Chapter 3.	Management Measures for a Sustainable Market Squid Fishery	3-1
3.1.	Project Objectives	3-1
3.1.1.	Fishery Control Rules	3-2
3.1.2.	Restricted Access Program	3-2
3.1.3.	Ecological Considerations	3-3
3.1.4.	Administrative Items	3-3
3.2.	Fishery Control Rules	3-3
3.2.1.	Definition of Maximum Sustainable Yield and Optimum Yield	3-3
3.2.2.	Proxy for MSY and Precautionary OY	3-4
3.2.3.	Seasonal Catch Limitation	3-5
3.2.4.	Weekend Closure for Commercial Market Squid Fishery	3-7
3.2.5.	Monitoring Programs	3-9
3.2.6.	Live Bait Fishery and Incidental Catch of Market Squid	3-9

3.2.7.	Gear Restrictions	3-9
3.2.8.	Restricted Access (Limited Entry) Program.....	3-10
3.2.9.	Capacity Goal	3-11
3.2.10.	Permit Fees	3-13
3.2.11.	Experimental Market Squid Vessel Permits	3-14
3.3.	Ecological Considerations	3-14
3.3.1.	Area and Time Closures to Address Seabird Issues	3-16
3.4.	Administrative Items	3-16
3.4.1.	Advisory Committee for Squid Fishery	3-16
Chapter 4.	Research to Support the Market Squid Fishery Management Plan	4-1
4.1.	Past and Ongoing Monitoring of the Commercial Fishery	4-2
4.1.1.	Sustainable Fishery Control Rules	4-2
4.1.2.	Fishery-Dependent Monitoring	4-2
4.1.3.	Fishery-Independent Research	4-4
4.2.	Current Knowledge of Essential Fishery Information	4-6
4.3.	Research to Obtain Essential Fishery Information.....	4-6
4.3.1.	E-Logs	4-6
4.3.2.	Empirical Dynamic Modeling	4-7
Chapter 5.	Future Management Needs and Management Costs	5-1
5.1.	Current Information Gaps	5-1
5.2.	Potential Future Management Changes	5-1
5.3.	Annual Management Cost	5-1
Literature Cited		L - 1
Appendix A. Glossary of Terms and Abbreviations		A - 1

List of Figures

Figure 2-1. Number of market squid by age from port samples by sex.	2-4
Figure 2-2. Food web for market squid, <i>Doryteuthis (Loligo) opalescens</i> , involving commercially important or abundant fish, birds, and marine mammals.	2-7
Figure 2-3. Range of market squid.....	2-12
Figure 2-4. Number of vessels and market squid landings by season for Northern California.....	2-18
Figure 2-5. Average monthly landings in tons for the market squid fishery divided at Point Conception into northern and southern fisheries from 1969 through 2024.....	2-22
Figure 2-6. Market squid landings in tons from 1969-1970 through 2023-2024 seasons showing the increase in landings for the fishery south of Point Conception.	2-23
Figure 2-7. Market squid fishery participation from 2000 to 2024 fishing seasons.	2-25
Figure 2-8. Participation (number of permits) in the commercial market squid restricted access fishery from 2000 to 2023.	2-26
Figure 2-9. Dollars paid ex-vessel and landings in tons 2000 through 2024.	2-31
Figure 2-10. Geographic location of major fishing areas in California by CDFW blocks (10' x 10') from 1999 through 2023.	2-33
Figure 2-11. Percentage of market squid total landings (by weight) by port complex from 1980 to 2024.	2-36

List of Tables

Table 2-1. Known predators of coastal pelagic species, including market squid.....	2-9
Table 2-2. Historical market squid landings in tons for California divided at Point Conception into north and south.....	2-16
Table 2-3. Description of market squid fishery gear types.....	2-17
Table 2-4. California landing receipt information for permitted and non-permitted vessels, 1980-1981 to 2002-2003 and 2020-2021 to 2023-2024.....	2-20
Table 2-5. Vessel, brail, and light boat permit numbers, 2000 to 2024.....	2-24
Table 2-6. Percent frequency of occurrence of bycatch in observed loads of California market squid from 2019 to 2023.	2-28
Table 2-7. Dollars paid ex-vessel by gear type for market squid fishery from 1981-1982 to 2023- 2024 seasons.	2-32
Table 2-8. Percent of revenue received by port area complex from 1981-1982 through 2023- 2024 fishing seasons.	2-34
Table 2-9 Summary of market squid regulations from 1959 to the present.	2-36
Table 3-1. Market Squid landings by season, 1991-1992 through 2002-2003 and average landings based on 10, 5, or 3 years using different seasons.....	3-6
Table 3-2. Annual permits fees and transfer fees as of April 2024.	3-13
Table 3-3 Diurnal seabird species that breed in the Channel Islands and the Farallon Islands.	3-15
Table 3-4 Nocturnal seabird species that breed in the Channel Islands and the Farallon Islands.	3-16
Table 4-1. Summary of market squid sample collections for independent and collaborative research projects over time.	4-4
Table 5-1. Estimated annual implementation costs for the MSFMP.	5-2

Acknowledgements

The Department would like to thank the members of the Squid Fishery Advisory Committee who helped with the 2024 review of market squid fishery management, regulations and science.

2024 Squid Fishery Advisory Committee Members:

Allen Akselrud, Caitlin
Ashley, Richie
Augello, Ryan
Barry, John
Bates, Ken*
Cappuccio, Joe
Crabbe, David
Fina, Mark
Galipeau, Russell
Hanson, Corbin
Helms, Greg
McHenry, Porter
Noto, Tom
Susi-Blair, Brian
Towsley, Ken*
Villareal, Joe
Vuosio, Anthony
Weinstein, Anna*
Yoakum, Dan

* These members did not complete the Advisory Committee meeting process.

Contributors to the original 2005 MSFMP process

Squid Research Scientific Committee Members:

Brodziak, Jon, Ph.D.
desClers, Sophie, Ph.D.
Gilly, William, Ph.D.
Hatfield, Emma, Ph.D.
Hamner, William, Ph.D.
Hunter, John, Ph. D
Sydeman, William, Ph.D.
Thomson, Cindy, Ph.D.

Squid Fishery Advisory Committee Members (2005):

Domeier, Michael, Ph.D. (Chair)
Amoroso, Orlando
Borman, John
Brockman, Donald
Crabbe, David
Deweese, Christopher, Ph.D.
Garrison, Karen
Genovese, Eddie
Jerkovich, Nick
Nobusada, Warren
Smith, Allen
Strasser, Paul

MSFMP 2000-2004 Contributors:

The MSFMP was in analysis and design phases beginning in January 2001. The efforts of many Department staff members (note, in 2005 the Department was California Department of Fish and Game [CDFG]), National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) researchers, University researchers, and fishermen contributed to the 2005 document. The Department acknowledges the concerted work of all individuals who contributed to the development of the MSFMP. For a listing of contributors, please refer to the Draft MSFMP dated 12 April 2004.

MSFMP Lead Authors and Editors:

The 2005 MSFMP was the result of revisions to a preliminary draft, which was released for public review in May 2002. It also went through an extensive peer review process. Based on these reviews, substantial improvements were made to the 2003 and the revised 2004 MSFMP. The core staff of authors and editors committed to these documents included:

Henry, Annette. Survey Coordinator, NOAA Fisheries – Southwest Fisheries Science Center (SWFSC), La Jolla, CA (formerly Biologist, CDFG, La Jolla, CA)
Lazar, Katherine. Scientific Aid. CDFG. La Jolla, CA
Chan, Corey. Scientific Aid. CDFG. La Jolla, CA
McDaniel, Jenny. Fisheries Biologist. NOAA Fisheries - SWFSC. (formerly Scientific Aid. CDFG. La Jolla, CA)
Fluharty, Marilyn. Environmental Scientist. CDFG. San Diego, CA
Rojek, Nora. Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Fairbanks, AK (formerly Environmental Scientist, CDFG, Monterey, CA)
Johnston, Deborah. Supervisory Biologist, Department of Defense, Tacoma, WA (formerly Environmental Scientist, CDFG, Monterey, CA)
Hill, Kevin, Ph.D. Fisheries Biologist, NOAA Fisheries - SWFSC, La Jolla, CA (formerly Senior Biologist, Specialist. CDFG. La Jolla, CA)

Yaremko, Marci. Senior Biologist, Specialist. CDFG. Santa Barbara, CA
Kong, Corey. Biologist. CDFG. Los Alamitos, CA
Taylor, Valerie. Biologist. CDFG. Los Alamitos, CA
Tanaka, Travis. Biologist. CDFG. Monterey, CA
Read, Robert. Associate Biologist. CDFG. San Diego, CA
Tillman, Terry. Senior Biologist, Specialist. CDFG. Sacramento, CA
Dale Sweetnam. Senior Biologist, Supervisor. CDFG. La Jolla, CA

The Peer Review Panel – Preliminary Draft MSFMP

Peer Review is the process of convening a panel of external experts to review any proposed Fishery Management Plan. The MSFMP Peer Review Panel analyzed the strengths and weaknesses of the FMP and recommended strategies that guided and secured a scientific basis for management. Under the guidance of Drs. William Leet and Christopher Dewees of the University of California, Davis, a Peer Review Panel of scientists was established to review the preliminary draft MSFMP. The Department would like to thank the contributions of the peer reviewers:

Hackett, Steven, Ph.D. School of Business Economics. Humboldt State University. Arcata, CA
Hatfield, Emma, Ph.D. Fisheries Research Services Marine Laboratory, Aberdeen, Scotland
Hochberg, F. G. "Eric", Ph.D. Department of Invertebrate Zoology, Santa Barbara Museum of Natural History. Santa Barbara, CA
Melvin, Ed, Ph.D. School of Fisheries Sciences. University of Washington. Seattle, WA
Pomeroy, Carolyn, Ph.D. Institute of Marine Sciences, University of California at Santa Cruz. Santa Cruz, CA

Chapter 1. Introduction

Market squid (*Doryteuthis (Loligo) opalescens*) is the state's largest fishery by tonnage and often economic value. In addition to supporting the commercial fishery, the market squid resource is important to the recreational fishery as bait and is forage for fishes, marine mammals, birds, and other marine life. In the 1990s, the international market for squid and declining squid production from other parts of the world increased demand for California market squid and resulted in rapid growth in the number of vessels harvesting squid and the volume of squid harvested. To provide for a sustainable fishery and protect against resource damage and ecological effects, the Legislature deemed it necessary to adopt and implement fishery management to sustain the squid population and the marine life dependent on squid.

The following sections discuss the purpose and need for management action in the commercial market squid fishery, describe the goals and objectives of the Marine Life Management Act (MLMA) and other relevant law, and identify management objectives specific to the market squid fishery management plan (MSFMP). A description of regulatory authorities and responsibilities that support management objectives completes the chapter.

1.1. Purpose and Need for Action

1.1.1. Problem Statement

Commercial landings of market squid in California increased almost 400% from the 1990-1991 to the 1997-1998 season. The squid fishing season runs from 1 April through 31 March the following year. Concern over the rapid increase in squid harvest and new vessels entering the fishery from other states led to industry sponsored legislation in 1997. Senate Bill (SB) 364 (Sher) was incorporated into Fish and Game Code (FGC) §8420-8429.7 which identified the problem as follows:

- (a) The Legislature finds and declares that the fishery for market squid (*Loligo opalescens*) is the state's largest fishery by volume, generating millions of dollars of income to the state annually from domestic and foreign sales. In addition to supporting an important commercial fishery, the market squid resource is important to the recreational fishery and is forage for other fish taken for commercial and recreational purposes, as well as for marine mammals, birds, and other marine life. The growing international market for squid and declining squid production from other parts of the world has resulted

in an increased demand for California market squid, which, in turn, has led to newer, larger, and more efficient vessels entering the fishery and increased processing capacity.

- (b) The Legislature finds that the lack of research on market squid and the lack of annual at-sea surveys to determine the status of the resource, combined with the increased demand for, and fishing effort on, market squid could result in overfishing of the resource, damaging the resource, and financially harming those persons engaged in the taking, landing, processing, and sale of market squid.
- (c) The Legislature further finds that some individuals, vessels, and processing plants engaged in the market squid fishery have no other viable alternative fisheries available to them and that a decline or a loss of the market squid resource would cause economic devastation to the individuals or corporations engaged in the market squid fishery.
- (d) The Legislature declares that to prevent excessive fishing effort in the market squid fishery and to develop a plan for the sustainable harvest of market squid, it is necessary to adopt and implement a fishery management plan for the California market squid fishery that sustains both the squid population and the marine life that depends on squid.
- (e) The Legislature finds that a sustainable California market squid fishery can best be ensured through ongoing oversight and management of the fishery by the Commission. With regard to the market squid fishery, the Legislature urges that any limited entry component of a fishery management plan, if necessary, should be adopted for the primary purpose of protecting the resource and not simply for the purpose of diminishing or advancing the economic interests of any particular individual or group.

The legislation further placed a moratorium on the number of vessels in the fishery, established a \$2,500 permit for market squid vessels and light boats and initiated a three-year study of the fishery. In addition, the first Squid Fishery Advisory Committee (SFAC) and a Squid Research Scientific Committee (SRSC) were formed to advise the California Department of Fish and Game (Department) on research and interim measures. Further, SB 364 required the Department to submit a report on the status of the market squid fishery with recommendations for a market squid conservation and management plan. In April 2001, the Department submitted the report, which was developed through the cooperative efforts of scientists, fishing industry representatives and other stakeholders. Late in 2001, the Legislature delegated management authority for the squid fishery to the Fish and Game Commission (Commission), including adoption of an MSFMP.

The Legislature recognized that little was known about market squid population dynamics, the size of the resource and other biological

information. In 1998, the Department developed and implemented a large-scale monitoring and biological research program on the market squid fishery and resource. The program continues to provide critical information necessary to long-term management strategies.

During the initial three years of study, contracted independent researchers (in conjunction with Department employees) explored several science-based methods for developing management strategies for the fishery. Research showed that the lifespan of market squid is less than one year, and that market squid availability, and likely their abundance, is highly variable among seasons. The findings indicate that traditional assessment methods used to determine biomass cannot be applied to market squid.

1.1.2. Rationale for MSFMP Review

Between 2014 and 2017, fishing communities from northern California developed a petition that was submitted to the Commission for a community-based squid fishery with its own quota for the ports of Noyo, Eureka, and Crescent City. In August 2021, Monterey area fishermen submitted a petition seeking additional time restrictions for the fishery. The State of Oregon also established commercial squid fishery management measures and regulations requiring the use of purse seine rib lines in 2022. The inquiry for a community quota outside the already established restricted access program, the request for modified time restrictions in Monterey, changes to squid fishery management measures and regulations in Oregon, and the development of the Department's first Enhanced Status Report (ESR) for market squid led to consideration and discussion of potential squid fishery management changes in California. With increasing interest in evaluating existing management and uncertainty involving climate change impacts on sustainable fisheries, the Department identified the need to revisit market squid regulations and initiated the process to form an advisory committee, pursuant to Section 53.02, Title 14, California Code of Regulations (CCR).

In 2023, the Department, with support from the California Ocean Protection Council and Resources Legacy Fund, initiated a review process for the market squid fishery and MSFMP A-1. The Department convened a new SFAC charged with reviewing the fishery and advising the Department on potential changes to California market squid fishery management. The goals of the SFAC process were to:

- Review changes in fishery dynamics
- Respond to past stakeholder input and management change petitions

- Consider potential new management measures as guided by the MSFMP A-1, ESR, and MLMA
- Work with a postdoctoral scholar (post-doc) to forecast future landings and catch per unit effort (CPUE) and evaluate harvest control measures in the context of climate change using Empirical Dynamic Modelling (EDM)
- Explore opportunities for small-scale fisheries and the ability for coastal communities and local economies to adapt to climate change
- Modernize data collection and fishery monitoring efforts, including the use of electronic reporting

1.1.3. Location and General Characteristics of the Project Area

The marine environment is composed of numerous microhabitats, each of which supports a distinct assemblage of species uniquely adapted to their environment. The harvest of market squid is proposed statewide, in all areas defined as ocean waters in CCR Title 14 §27.00, except where prohibited or restricted, as specified, in state marine protected areas (MPAs), and as regulated by provision of this MSFMP A-1. Generally, market squid are harvested nearshore on sandy bottom habitats. Seasonal shifts in resource availability and timing of peak market squid spawning results in vessel participation typically concentrated in two distinct fishing areas, central California in the summer and Southern California Bight (SCB) in the late fall and early winter.

In the late fall and early winter, colder temperatures and winter storms generate more mixing of the water column, coinciding with increased landings in the SCB from the northern Channel Islands southward to the U.S. / Mexico International border. During the summer, fishing effort in central California is focused around Monterey Bay and tends to occur between April and September, coinciding with the upwelling season. Prior to the 1980s, the majority of commercial catch came from the Monterey Bay area. However, since the 1985-1986 season, the majority of the catch has come from the SCB. Landings spiked dramatically in the Monterey Bay area in 2010 and continued through 2014. An in-depth description of habitat associations and life history characteristics of market squid is found in Chapter 2.

1.2. The Marine Life Management Act

The MLMA of 1998 created policies, goals, and objectives to govern the conservation, sustainable use and restoration of California's living marine resources. The MLMA opened a new chapter in the conservation and management of California's marine wildlife and fisheries (Weber and

Heneman 2000) and gave the Commission and Department specific authorities, goals, objectives, and mandates for managing marine resources.

Goal I: Ensure Long-Term Resource Conservation and Sustainability

The MLMA's overriding goal is to ensure the conservation, sustainable use, and restoration of California's marine living resources [FGC §7050(b)]. The goal includes the conservation of healthy and diverse marine ecosystems and marine living resources [FGC §7050(b)(1)], as well as for allowing and encouraging only those activities and uses that are sustainable [FGC §7050(b)(2)]. Sustainability is the overriding principle of the MLMA.

Within this overall policy on marine living resources, the MLMA sets the State's policy for marine fisheries [FGC §7055; §7056]. Objectives include:

1. Conserve the health and diversity of marine ecosystems and marine living resources [FGC §7050(b)(1)].
2. Allow and encourage only those activities and uses of marine living resources that are sustainable [FGC §7050 (b)(2)].
3. Maintain the health of marine fishery habitat, and to the extent feasible, restore or enhance that habitat where appropriate [FGC §7056(b) and §7084].

Goal II: Employ Science-based Decision-making

The MLMA includes, as a general objective, promotion of marine ecosystem research that will enable better management decisions [FGC §7050(b)(5)]. The MLMA also calls for basing decisions on the best available scientific information as well as other information that the Department and the Commission possess [FGC §7050(b)(6)]. While the MLMA emphasizes scientific information in making decisions regarding the conservation and sustainable use of California's marine living resources, it also recognizes the value and importance of relying upon other sources of information such as local knowledge [FGC §7056(h)].

Objectives include:

1. Encourage fishery management decisions that are adaptive and based on the best available information and that do not substantially delay the management process [FGC §7056(g) and FGC § 7072(b)].
2. Create cooperative and collaborative partnerships with fishery participants, public and private entities, and research institutions to acquire Essential Fishery Information (EFI) and to design and conduct research and monitoring [FGC §7056(k)].

3. Periodically review the management system for effectiveness in achieving sustainability goals and for fairness and reasonableness in its interaction with people affected by management [FGC §7056(m)].

Goal III: Increase Constituent Involvement in Management

The MLMA focuses special attention on constituent involvement in marine fisheries management – not only in the development of management plans but in other key activities such as research and implementation of management decisions. The MLMA calls for involving “all interested parties” in making decisions regarding marine living resources [§7050(b)(7)] and for disseminating accurate information on the status of marine life and its management §7050(b)(8)]. Objectives include:

1. Develop an open decision-making process and seek the advice and assistance of interested parties so as to consider relevant information including local knowledge [FGC §7056(h)].
2. Allow fishery participants to propose methods to prevent or reduce excess effort in market squid fishery [FGC §7056(e)].
3. Involve constituents in preparing Fishery Management Plans (FMPs) [FGC §7076(a)].
4. Involve interested people in designing research protocols for individual FMPs [FGC §7074(b)].

Goal IV: Balance and Enhance Socio-economic Benefits

California's fisheries are a public trust resource. As such they are to be protected, conserved and managed for the public benefit, which may include food production, commerce and trade, subsistence, cultural values, recreational opportunities, maintenance of viable ecosystems, and scientific research. None of these purposes need be mutually exclusive and, ideally, should be encouraged to the degree possible, consistent with resource conservation. The MLMA requires recognition of important aesthetic, educational, scientific, and recreational uses that do not require taking marine wildlife, as well as the economic and cultural importance of sustainable sport and commercial fisheries [FGC §7050(b)(3)(4)]. Objectives include:

1. Recognize the importance of non-consumptive uses of California's marine resources [FGC §7050(b)(3)].
2. Observe the long-term interests of people dependent on fishing for food, livelihood, or recreation, and minimize the adverse impacts of fishery management on small scale fisheries, coastal communities, and local economies [FGC §7056(i)(j)].

3. Develop mechanisms to resolve disputes about issues such as, but not limited to, access, allocation, and gear conflicts [FGC §7056(k); FGC §7059(b)(2)].

Goal V: Identify Implementation Costs and Sources of Funding

The Department's management of commercial and recreational fisheries has been supported by general funds appropriated by the Legislature, by federal funds for commercial and recreational fishing, and by user fees in the form of permits, licenses, and other fees (FGC §710.5). In FGC §711(c), the Legislature stipulated that revenues for recreational hunting and fishing programs not be used for other purposes, including commercial fishing. In 1993, the Legislature reiterated its intent to ensure adequate funding from appropriate sources (FGC §711).

Objectives:

1. Help ensure that fees more accurately reflect all costs of the Department's management [FGC §710.5].
2. Identify the resources and time necessary to acquire essential fishery information [FGC §7081(b)].
3. Cooperate with the Legislature, the commercial fishing industry, recreational fishermen, the environmental community, and other interested people to identify alternative sources of funding for “the department's necessary marine resource management and protection responsibilities” [FGC §710.7(c)].

1.2.1. MLMA Master Plan

The MLMA Master Plan (Master Plan) is a roadmap designed by the Department to achieve the objectives and goals described in the MLMA. As many fisheries are under state jurisdiction, and given the limited resources of the Department, prioritizing management efforts is essential. First adopted in 2001, the Master Plan provides guidance on prioritization, as well as tools and resources to aid the management process. It advises on the development of FMPs to manage priority species, including market squid, based on the results of a productivity and susceptibility analysis. A second revised Master Plan was adopted in 2018 that enhanced the implementation of the MLMA through new tools, insights, and priorities that have emerged since 2001. The Master Plan also presents an overview on performing stock assessments and utilizing population modeling techniques for data limited fisheries such as market squid.

The exploration of EDM is an example of how new tools and insights have informed the management of market squid since the implementation of the

original MSFMP. Other guidance topics in the Master Plan include prioritization of management efforts, meeting stock sustainability objectives, meeting ecosystem objectives, integrating MPAs into fisheries management, adapting to climate change, advancing socioeconomic and community objectives, making management adaptive, using the best available science, enhancing and scaling MLMA based management, ensuring the Master Plan is an effective resource and guide, and engaging stakeholders and collaborating with partners. Master Plan goals and objectives were a primary focus during the 2023-2024 SFAC process. The Master Plan can be found online at <https://wildlife.ca.gov/Conservation/Marine/MLMA/Master-Plan>.

1.2.2. Enhanced Status Reports

In addition to the Master Plan, ESRs are key documents to implementing the goals of the MLMA. ESRs are publicly available and provide an overview of a specific fishery. Information described in ESRs include annual landings, species biology and history, current management activities, monitoring activities, and assessment efforts. The Master Plan envisions the use of ESRs in lieu of full FMPs for species with low levels of management need. Since enactment of the original Master Plan in 2001, 36 ESRs have been developed, covering 45 of the State's most significant commercial and recreational fisheries, including market squid. Unlike other species, where ESRs are used in the absence of a full FMP, the market squid ESR supplements the FMP. It summarizes all available and the latest EFI, ensuring the transparency and accessibility goals outlined by the MLMA are achieved. Unlike an FMP, the market squid ESR is updated annually with key fishery and scientific information. The ESR is available on the Department's Marine Species Portal at <https://marinespecies.wildlife.ca.gov/market-squid/>.

1.3. Specific Goals and Objectives of the Market Squid Fishery Management Plan

1.3.1. Goals:

- To manage the market squid resource to ensure long-term resource conservation and sustainability;
- To develop a framework for management that will be responsive to environmental and socioeconomic changes.

1.3.2. Objectives:

- Provide for the sustainable use of the market squid resource by commercial and recreational fisheries for the optimum long-term benefits of present and future generations;

- Maintain an adequate forage reserve for marine mammals, fish and seabirds;
- Use adaptive management to provide for necessary changes and modifications of management measures in a timely and efficient manner;
- Ensure proper utilization, the avoidance of bycatch in the market squid fishery, and the avoidance of wastage of market squid in other fisheries;
- Support and promote increased understanding of market squid natural history, population dynamics, and its ecosystem's role to improve management;
- Ensure effective monitoring of the market squid population and its fisheries;
- Ensure enforcement of regulations;
- Identify, protect, and restore critical market squid habitat;
- Minimize the adverse impacts of management on small-scale fisheries, coastal communities, and local economies.

1.4. Constituent Involvement

The MLMA calls for meaningful constituent involvement in the development of each FMP and requires the Department to develop a process to involve interested parties in the development or review of an FMP. In addition, the California Environmental Quality Act (CEQA) requires public consultation during lead agency review of all proposed projects subject to a certified regulatory program [See generally Public Resources Code (PRC) §21080.5(d)(2); see also CCR Title 14 §781.5]. The MSFMP A-1 and its associated implementing regulations is, of course, such a project under CEQA.

1.4.1. Involvement in the Original 2005 FMP Development

In 1998, two advisory committees were formed to examine the market squid fishery: the SFAC and the SRSC. The SFAC included fishery participants, environmentalists, and scientists and advised the Department on proposed management strategies and changes to the fishery. The SRSC comprised national and international university, agency, and private industry scientists and made recommendations on squid research protocols and methods as well as management strategies. The two committees met from 1998 through 2000 and played a major role in the interim management of the fishery.

The Department prepared and filed a Notice of Preparation (NOP) with the State Clearinghouse in December 2001 for distribution to appropriate responsible and trustee agencies for their input and comments. Further, the

notice was provided to individuals and organizations that had expressed prior interest in regulatory actions regarding market squid. Comments received in response to the NOP and a preliminary draft MSFMP are addressed in Section 4 of the 2005 MSFMP.

The Department also conducted two public meetings to present options for management of the market squid fishery. The first meeting was held on 26 January 2001 in Port Hueneme and the second was in Monterey on 27 January 2001. The proposed project for management of the market squid fishery was developed through the two venues.

The Department released the Preliminary Draft MSFMP for public review and comment on 15 May 2002. The Preliminary Draft MSFMP was sent to interested parties and was also posted on the Department's web site for public review. The Department accepted all written comments regarding the Preliminary Draft MSFMP that were received before 8 February 2003. Responses to comments regarding the Preliminary Draft MSFMP are addressed in Section 4.

The Department submitted to the Commission the Draft MSFMP on 7 July 2003. The MSFMP was the result of revisions to the Preliminary Draft MSFMP, which was released for nearly a year of public review in 2002. It also went through an extensive scientific peer review process. As a result, substantial improvements were incorporated into the 2003 Draft MSFMP, and it was completely reorganized into four sections and streamlined for clarity and content. Public testimony on the Draft MSFMP was taken at the 1 August 2003 and 5 December 2003 Commission meetings.

At the 3 December 2003 meeting, the Commission asked the Department to incorporate additional alternatives and analysis into the Draft MSFMP. A revised Draft MSFMP was released for public review and comment on 12 April 2004. Public testimony on the revised Draft MSFMP was taken by the Commission at the 4 May 2004, 27 August 2004, and 3 December 2004 meetings. In addition, the Commission held special hearings in Monterey (23 July 2004) and San Pedro (13 August 2004) to take public testimony directly from fishermen in the ports where the majority of squid fishing activity occurs.

The Commission adopted the MSFMP at its 27 August 2004 and 3 December 2004 meetings. The Department has addressed all written comments regarding the Draft MSFMP received through 3 December 2004 in Section 4 of the original MSFMP.

1.4.2. Involvement in the FMP Review

In spring 2022, one-on-one interviews with interested stakeholders were conducted by the professional facilitation team, Concur Inc., to capture the broad range of perspectives on potential changes for squid fishery management and to test the willingness of interviewees to engage in a deliberative advisory process. In fall 2022, a call for nominations was released by the Department to squid fishery stakeholders, California Native American Tribes, and the public. SFAC members were selected to participate as representatives for specific stakeholder groups, and an SFAC listserv was developed to keep the public and interested Tribes informed of the SFAC's progress. Concur assisted in developing a biography portfolio that included each of the SFAC members, meeting ground rules, and a committee charge to help the SFAC prepare for a series of meetings. The SFAC consisted of a broad group of stakeholders, including representatives from the fishing industry, non-governmental organizations, government scientists, and the public.

The SFAC met 10 times between July 2023 and May 2024. Input was compiled by the Department, reviewed with SFAC members, and eventually used to develop final Department recommendations. The recommendations were presented to the SFAC over the course of a two-day final meeting to gauge agreement, receive recommended changes, and finalize the Departments recommendations.

In July and November 2023, the Department provided written updates on the SFAC process to the Fish and Game Commission's Marine Resources Committee (MRC). In July 2024, the MRC received and discussed the Department's submitted SFAC report, which detailed the Department's proposed recommendations after concluding the SFAC process. At the November 2024 MRC meeting, the MRC recommended moving forward with the Department's recommendations regarding changes in monitoring, further exploration in fishing dynamics and EDM, fishing effort and temporal closures, small scale fishery access, gear, and lighting and seabird habitat.

1.5. The Structure of the Market Squid Fishery Management Process under the Marine Life Management Act

The MLMA recognizes the need to adapt to changing circumstances and embraces the principle of adaptive management. The MLMA defines adaptive management as a scientific policy that seeks to improve management "by viewing program actions as tools for learning" (FGC §90.1). Management measures must be designed to provide useful

information whether they succeed or fail. Monitoring and evaluation of fisheries are needed to detect the effect of the measures.

The MLMA explicitly calls for ensuring that managers can respond to changing environmental and socio-economic conditions [FGC §7056(l)], and requires that FMPs establish a procedure for regular review and amendment, if that is appropriate [FGC §7087(a)]. Because the review and amendment of an FMP is generally a lengthy process, the MLMA allows greater flexibility in responding to changes in a fishery by allowing an FMP to specify the kinds of regulations that may be changed without amending the FMP itself [FGC §7087(b)]. Federal regulatory processes are similar, where annual quotas or in-seasons adjustments in management measures may generally be made without resorting to the lengthy process of amending the FMP itself.

To meet the standards of the MLMA for adaptive management, the MSFMP A-1 establishes a hierarchical framework within which adjustments to the management of the market squid fishery can be made in a responsible and timely manner. Depending upon the scale and significance of needed changes in management, the FMP itself may need to be amended or an in-season decision by the Commission or Department may be appropriate. The former action requires much greater analysis and public review than does the latter. Standards for determining the appropriate level of action are described below.

1.5.1. Process of Plan Review

The MLMA requires public and peer review for all FMPs (FGC §7075-7078). For public review, the Department solicits input and/or assistance from the various user groups who may be affected by the FMP or other interested parties prior to and during development of an FMP. The Department can also approach the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries), Sea Grant, the Pacific Fishery Management Council (PFMC), or advisory committees established by the Department for advice. Once the FMP or amendment is developed, the plan must be submitted to the Commission and available to the public for review and comment. The Commission must hold at least two public hearings on the FMP. Any comments or proposals made to the Commission relative to the FMP may be considered by the Commission and forwarded to the Department for inclusion into the FMP.

For peer review, the Department set up a formalized procedure as required by FGC §7062 for examining the science that is used as the basis for any management recommendation. The peer review panel was given all pertinent comments received by the Department from fishery participants or

other interested parties. Any suggestions made through peer review can be used in whole or part; however, if the Department disagrees with the findings and chooses not to use the recommendations, an explanation of why the peer review recommendations were not used must accompany the FMP or amendment. Comments received from the peer review committee and Department responses were presented in Section 4 of the Draft MSFMP dated 12 April 2004. As the overall management framework was not changed in this amendment, additional external peer review was not conducted. Changes presented are supported by the same scientific basis and consistent with the framework established in the original 2005 MSFMP.

Following adoption of the MSFMP A-1, the Department recommends periodic review to evaluate fishery performance as a result of new requirements and to determine if additional amendments or regulatory changes are needed. The ESR is the primary document to find up-to-date information on California market squid fishery and fishery management.

1.5.1.1. Types of Framework Actions

The Commission may take four general types of actions within the framework of the MSFMP A-1: 1) FMP amendment, 2) full rulemaking, 3) notice action, and 4) prescribed action. Each type of action reflects a different degree of change in management - from changing a basic feature of the MSFMP A-1 itself to implementing a routine administrative matter, such as closing the fishery when seasonal catch limit (SCL) is reached. Brief descriptions of each action type and the conditions for their use follow.

FMP Amendment

FMP framework management is designed to be flexible and adaptable to a wide range of future conditions and intended to function without the need for frequent amendment. However, unforeseen biological, environmental, social or economic developments may create a situation under which the MSFMP A-1 does not adequately provide effective management of the market squid fishery. Under such circumstances, the Commission could amend the MSFMP A-1.

The MSFMP A-1 must be amended if the change in management is a major or controversial action outside the scope of the MSFMP A-1. Examples of such actions include:

- changes to management objectives;
- a change in the “overfished” or “overfishing” definitions;
- amendments to any procedures required by the FMP;
- revisions to any management measures that are fixed in the FMP.

Besides obtaining the views of advisory bodies, holding public hearings, and soliciting public comments, preparation and adoption of an amendment to the MSFMP A-1 may require environmental analysis of proposed changes under CEQA.

Full Rulemaking Actions

If changes to management measures will have a long-term effect, allow discretion in their application, or have impacts that may not have been analyzed previously, a full rulemaking process is required. This process, which must follow standard Administrative Procedures Act procedures, normally requires at least three Commission meetings. full rulemaking may also be used to declare a management measure “routine.” In the full rulemaking process, the Commission reviews the issues at a first meeting and authorizes its staff to publish notice of its intent to adopt regulations at a later meeting. This notice, which begins a minimum 45-day period for public comment, includes specific documentation including an Informative Digest that summarizes existing law and the effect of the proposed action, the deadline for public comments, the time and place of any public hearings, and contact information for obtaining additional information. The notice is sent to persons on the Commission's and Department's active mailing lists and published in the California Regulatory Notice Register.

At its second meeting, the Commission reviews the proposed measures and alternatives in detail and receives public comment. At the third meeting, the Commission hears public comment and adopts the final rules. Commission staff then submits the final rules to the Office of Administrative Law for procedural review prior to publication.

The Commission or the Department may refer an issue to a standing committee or appoint an ad-hoc advisory committee to conduct further analyses and/or develop recommendations. The composition of such committees will include the Department, other agencies with statutory responsibility for the issue, representatives from affected groups, and any other persons chosen by the Commission.

This process does not diminish the authority of the Director or the Commission to take emergency regulatory action under FGC §7710, California Government Code (CGC) §11346.1, or FGC §240.

Notice Actions

Once a measure (such as establishing annual catch quotas) has been classified as routine through the full rulemaking Action process, it may be

modified after a single meeting of the Commission if both of the following conditions are met:

- the modification is proposed for the same purpose as the original measure;
- impacts of the modification are within the scope of the impacts analyzed when the measure was originally classified as routine.

Before acting on such a proposal, the Commission will send a written notice describing the proposed action to people on the Commission's and Department's active mailing list and will provide a 15-day period for comment.

Prescribed Actions

When an action is non-discretionary and the impacts have already been analyzed through full rulemaking, the Department may take the action without prior public notice, opportunity to comment, or a Commission meeting. An example of such a Prescribed Action is the closure of a fishery when a quota has been reached. The full rulemaking process that authorized the Prescribed Action must specify methods for notifying the public.

1.5.1.2. Review of Management Measures

The MLMA requires periodic review of management measures because environmental, social, and economic changes during the year may lead to consideration of regulatory changes under the framework described above. The MSFMP A-1 proposes that the Department conduct a periodic review to determine the effectiveness of market squid regulations in accomplishing the goals and objectives of the MSFMP A-1. Periodic review will determine whether any resource, conservation, social, or economic issues exist that require a management response.

Examples of biological issues that might trigger further review and possible regulatory action are:

- catch that is projected to exceed the allowable catch limits;
- increased interaction with non-target species;
- any adverse or significant change in the biological characteristics of harvested market squid stock (e.g., age composition);
- existing or imminent overfishing;
- development of a stock assessment for market squid that significantly changes the estimates of impacts from current management;

Examples of social or economic issues that may be addressed in the periodic review are:

- gear conflicts, or conflicts between competing user groups;
- extension of fishing and marketing opportunities as long as practicable;
- improvements to product volume and flow to the consumer or user;
- to increase economic yield;
- to maintain or improve the safety of fishing operations;
- to increase or decrease fishing efficiency;
- to maintain or improve product quality;
- to maintain or improve data collection, including means for verification;
- to maintain or improve monitoring and enforcement;
- to address any other measurable benefit to the fishery.

If the Department determines that current management of the market squid fishery is not meeting the goals of the MSFMP A-1, the Department may present such information to an advisory committee(s) established under the MSFMP A-1 to seek their views and recommendations. The Department will then present its recommendations and views of the advisory committee(s) to the Commission regarding the need for changes in management of the market squid fishery. The Department will present the rationale, data and analyses in support of its recommendations for regulatory changes. The advisory committee(s) may also make management recommendations to the Department. The Commission will then determine whether to consider an amendment to the MSFMP A-1 or a full rulemaking action for the regulations implementing it.

1.6. Authority and Responsibility

As per the California Constitution, the State Legislature, through statute, may provide for the seasons and the conditions under which different species of fish may be taken. California law consists of 29 codes including the FGC. Laws in the FGC consist of statutes and propositions passed by the voters of the state. Statutes, such as MLMA, are chaptered bills that have passed through both houses of the Legislature and ultimately signed by the Governor and recorded by the Secretary of State. The FGC is administered and enforced through regulations. The rulemaking powers of the Commission, a body created by the Constitution and appointed by the Governor, are delegated to it by the Legislature.

The Department is the state agency charged with carrying out certain policies adopted by the State Legislature and the Commission. The

Department enforces statutes and regulations governing recreational and commercial fishing activities, conducts biological research, monitors fisheries, and collects fishery statistics necessary to protect, conserve, and manage the living marine resources of California.

Other state agencies have functions and responsibilities that directly or indirectly affect the management of ocean and coastal resources. In addition, marine resources are also managed by federal laws governing the take of seabirds, marine mammals, fish, and shellfish (Weber and Heneman 2000).

1.6.1. California Environmental Quality Act

The Legislature enacted CEQA in 1970 to serve primarily as a means to require public agency decision makers to document and consider the environmental implications of their actions. In so doing, CEQA is premised on a number of Legislative findings and declarations, including a finding that it is “necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man.” [PRC §21000(b)] CEQA also codifies State policy to, among other things, “Prevent the elimination of fish or wildlife species due to man’s activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history” [Id., PRC §21001(c)]. A similar provision in the FGC also declares: “It is hereby declared to be the policy of the State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant-water fisheries based in California in harmony with international law respecting fishing and the conservation of the living resources of the oceans and other waters under the jurisdiction and influence of the State.” (FGC §7055) CEQA applies to all “governmental agencies at all levels” in California, including “state agencies, boards, and commissions” [PRC §21000(g), 21001(f)(g)]. Public agencies, in turn, must comply with CEQA whenever they propose to approve or carry out a discretionary project that may have a significant effect on the environment (see generally Id., PRC §21080). For purposes of CEQA, a project includes “an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment,” that is, like the proposed project, “directly undertaken by any public agency” [Id., PRC §21065(a)]. Moreover, as mandated by the Legislature, “it is the policy of the state that projects to be carried out by public agencies be subject to the same level of review

and consideration under [CEQA] as that of project required to be approved by public agencies” (Id., PRC §21001.1).

Unlike its “procedural” federal counterpart, the National Environmental Policy Act (42 USC §4321 et seq.), CEQA contains a “substantive mandate” that public agencies refrain from approving projects with significant environmental effects if there are feasible mitigation measures or alternatives that can substantially lessen or avoid those effects (Mountain Lion Foundation, *supra*, 16 Cal.4th at p. 134; PRC §21002). CEQA, as a result, “compels government first to identify the [significant] environmental effects of projects, and then to mitigate those adverse effects through the imposition of feasible mitigation measures or through the selection of feasible alternatives” [Sierra Club v. State Board of Forestry (1994) 7 Cal.4th 1215, 1233; see also Sierra Club v. Gilroy City Council (1990) 222 Cal. App.3d 30, 41.]. Public agencies fulfill CEQA’s mandate through required consultation with other interested public agencies and the public; preparation of Environmental Impact Reports (EIRs), functional equivalent documents (see section 1.3.1.1), or other appropriate CEQA analysis; subjecting their environmental analyses to public review and comment, and preparing responses to public comments concerning the environmental impacts associated with their proposed projects; and ultimately adopting findings detailing compliance with CEQA’s substantive mandate. In this respect, the CEQA process “protects not only the environment but also informed self-government” [Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, 564 (internal quotation marks deleted)]. Indeed, as underscored by the California Supreme Court, compliance with these requirements, even in the context of a certified regulatory program, “ensures that members of the [governmental decision-making body] will fully consider the information necessary to render decisions that intelligently take into account the environmental consequences. It also promotes the policy of citizen input underlying CEQA [Mountain Lion Foundation, *supra*, 16 Cal.4th at p. 133 (internal citations omitted)].

1.6.2. Functional Equivalent

There is an alternative to the CEQA EIR/Negative Declaration (ND) requirement that exists for State agencies with activities that include protection of the environment as part of their regulatory program. Under this alternative, an agency may request certification of their program from the Resources Agency Secretary (PRC §21080.4 of CEQA). With certification, an agency may prepare functional equivalent environmental documents (ED) in lieu of EIRs or NDs (PRC §15252 CEQA Guidelines). The regulatory program of the Commission has been certified by the Resources Agency Secretary; thus, the Commission is eligible to submit an ED in lieu of an EIR. However, the

exception for the certified state regulatory program is not a blanket exemption from CEQA because the agency must still comply with CEQA policies, evaluation criteria, and standards.

1.6.3. MSFMP Environmental Document

The ED found in Section 2 of the 2004 original FMP describes the proposed project options, status quo options (no project alternative), and a range of alternative project options evaluated in the original draft MSFMP. It discusses the potential effects of the proposed project, reasonable alternatives to the proposed action and cumulative effects related to the proposed project and its alternatives. The discussion of alternatives focuses on the alternatives to the project that are capable of avoiding or substantially lessening the significant effects of the project, even if the alternatives would impede to some degree the attainment of the project objectives or would be more costly. Of those alternatives, the ED examines in detail only the ones that could feasibly attain most of the basic objectives of the project. It does not consider alternatives whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

At its 27 August 2004 meeting in Morro Bay, the Commission certified the MSFMP's ED for consistency with the provisions of CEQA and adopted the MSFMP. As the MSFMP A-1 does not change the scientific basis for the management framework, and proposed changes are more protective of the environment, a new CEQA document was not prepared as the process falls under a no action certified regulatory program.

1.6.4. Federal Law

The Federal government manages the marine resources and fishing activities of the United States (U.S.) through the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The purpose of the MSFCMA is to provide conservation and management of U.S. fishery resources, develop domestic fisheries, and phase out foreign fishing activity within the Exclusive Economic Zone (EEZ) consisting of ocean waters from three miles to 200 miles offshore. Under MSFCMA, the federal government also has jurisdiction over fish species that occur predominately in the EEZ and may preempt state jurisdiction over such fisheries in state waters when state management conflicts with a federal FMP.

Eight Regional Fishery Management Councils implement the goals of the MSFCMA in coordination with NOAA Fisheries, U.S. Department of Commerce. PFMC manages several fisheries off Washington, Oregon, and California through FMPs. The State of California has representation on the PFMC. Five coastal pelagic species (CPS) are regulated under the federal

Coastal Pelagic Species FMP (CPS FMP) including Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), jack mackerel (*Trachurus symmetricus*), and market squid (*Doryteuthis (Loligo) opalescens*) (PFMC 2023).

Amendment 8 of the CPS FMP placed Pacific mackerel, Pacific sardine, jack mackerel, and market squid in a management unit with northern anchovy. In 2003, Amendment 10 established a proxy maximum sustainable yield (MSY), using egg escapement, for market squid to bring the CPS FMP into compliance with MSFCMA. In 2010, Amendment 13 incorporated new National Standard 1 guidelines that were developed in response to the Magnuson-Stevens Reauthorization Act of 2006 to end and prevent overfishing.

1.6.5. State Management of Market Squid

Management of the market squid fishery has been divided between the Legislature and the Commission. The market squid fishery was minimally regulated until the passage of SB 364 in 1997. Since that time, both the Legislature and the Commission have adopted management measures for various components of this fishery (see Appendix B in the original 2005 MSFMP).

1.6.5.1. Legislative Responsibilities

Statutes passed by the Legislature regulating commercial fishing are contained in the FGC. Some provisions of law apply specifically to market squid, while others apply generally to the take of all fish including some area closures and gear restrictions.

Statutes pertaining specifically to the commercial take of market squid are listed in Appendix B in the original 2005 MSFMP.

The MLMA identifies a number of policies, goals, objectives, requirements, and processes for managing California's marine resources. These resources are to be managed to assure ecological, recreational, long-term economic, cultural, and social benefits.

The MLMA requires that FMPs form the primary basis for managing the State's marine fisheries. An FMP is a planning document that is based on best available scientific information and contains a comprehensive review of the fishery along with clear objectives and measures to promote sustainability of that fishery.

1.6.5.2. Commission and Department Responsibilities

The authority and responsibility of the Commission and the Department to make and enforce regulations governing recreational and commercial fishing are provided by the Legislature. General policies for the conduct of the Department are formulated by the Commission (FGC §704). General policy for conservation of aquatic resources is provided by FGC §7055, and specific policy for the management of marine resources (MLMA) is provided in FGC § 7050-7090.

1.6.5.3. Commercial Fisheries

Commercial fishing is regulated by the Legislature through statutes and by the Commission through regulations. Provisions relating to the taking and possession of fish for commercial purposes are provided in FGC §7600-9101 and CCR Title 14. With the passage of the SB 209 (2001), authority to regulate the market squid fishery was delegated to the Commission.

1.6.5.4. Rulemaking Process under the Administrative Procedures Act (APA)

The California Constitution and Legislative statutes create public entities and can authorize them to make regulations to carry out their duties. The APA of the CGC §11340-11359 guides the rulemaking process for such entities.

The Commission's general rulemaking authority is provided in FGC §200-221 and in other statutes throughout the FGC. Basic minimum procedural requirements for the adoption, amendment or repeal of regulations are provided in the CGC §11346. Emergency rulemaking authorities are found in CGC §11346.1 and in FGC §240.

Chapter 2. Background: A Description of the Species, the Fishery, and Social and Economic Components of the Market Squid Fishery

2.1. Species Description

Market squid (*Doryteuthis (Loligo) opalescens*) or opalescent squid, are part of the class Cephalopoda and the phylum Mollusca (Berry 1911). Approximately 750 recognized species of squids are recognized today and more than 10,000 fossil forms of cephalopods. Market squid belong to the family Loliginidae and generally have a mixed, iridescent (opalescent) coloration of milky white and purple; however, color changes can occur rapidly. Similar to most squid species, market squid possess an ink sac that serves as a defense mechanism by expelling ink to confound predators. Squid have eight arms and two longer feeding tentacles. Squid have large, well-developed eyes and strong parrot-like beaks. Males are larger and more robust than females. Market squid are terminal spawners; spawning occurs at the end of their life span (6 to 10 months after hatching) (Butler et al. 2001).

At the Cephalopod International Advisory Council Symposium in Phuket, Thailand in February 2003, a consensus was reached that based on morphology and molecular evidence, the scientific name for market squid should be changed from *Loligo opalescens* to *Doryteuthis (Amerigo) opalescens* (Anderson 2000, Vecchione et al. 2005). The name change was not formalized or published (CDFG 2005). The State currently refers to *Loligo opalescens* as market squid in statute (Fish and Game Code (FGC) §8420, §8597) and the Department uses the name market squid or *Loligo opalescens* throughout the original 2005 MSFMP (CDFG 2005).

2.2. Range, Distribution, and Migration

Market squid range from the southern tip of Baja California, Mexico to southeastern Alaska. Juveniles and adults range throughout the California and Alaska Current systems (Jereb et al. 2010). In California, market squid typically spawn in shallow, nearshore areas, and are generally found in central California in summer months, and southern California in winter months (Hardwick and Spratt 1979).

Ocean currents disperse newly hatched market squid (called paralarvae) off egg bed areas. Paralarvae are found most commonly 1.0 to 3.0 kilometers (km) (0.6 to 1.9 miles (mi)) from shore, concentrated in areas where water masses converge (Okutani and McGowan 1969; Zeidberg and Hamner 2002). Market squid distribution is patchy, yet if squid are found at one site, it

is likely that additional squid will be found in close proximity (contagious distribution). Market squid are found at depths of 30 meters (m) (98 feet (ft)) by day and 15 m (49 ft) at night, suggesting diel movement, and have been found as deep as 600 m (1,969 ft) during the day (Hunt et al. 2000; Zeidberg and Hamner 2002).

Juvenile squid begin to school at a dorsal mantle length (DML) of 15.0 millimeters (mm) (0.6 inches (in)) (Yang et al. 1983, 1986) or 2.5 months of age (based on the growth curve presented in Butler et al. 2001) and occur on the continental shelf just off the bottom by day and throughout the water column at night (Zeidberg et al. 2004). As market squid reach 55.0 mm (2.2 in) DML they move off the continental slope (Zeidberg et al. 2004). Market squid use their fins for swimming in much the same way fish do and their funnel for extremely rapid "jet" propulsion forward or backward, which allows squid to migrate long distances from offshore pelagic waters to nearshore areas and form dense aggregations for spawning at an age of 6 to 10 months (Butler et al. 2001).

The number of different stocks or subpopulations of market squid along the entire Pacific Coast is currently unknown and genetic studies have drawn differing conclusions. Results from Cheng et al. (2020) provide preliminary support to the existence of smaller genetically distinct cohorts that continually spawn in California, as opposed to the prevailing notion that spawning occurs in two asynchronous peaks in the central California and southern California regions. A cohort is defined as a group of squid spawned during the same period. Both Gilly (2003) and Reichow and Smith (1999, 2001) concluded that spawning populations that are commercially harvested from the Channel Islands are not genetically distinguishable from those landed in Monterey Bay. While Gilly et al. (2001) found slight but significant genetic differences between samples taken from central California and southern California, no temporal or spatial genetic differences for market squid within the SCB and no temporal differences between samples in the Monterey areas were evident.

2.3. Age and Growth

Market squid egg hatching rate is determined by temperature, with incubation time ranging from 22 to 90 days at temperatures from 42 to 68°Fahrenheit (F) (5.6 to 20 °Celsius(C)) (Isaac et al. 2001). Squid eggs are commonly deposited in areas with water temperatures between 50 and 58°F (10 to 14.4 °C) resulting in incubation periods lasting from 34 to 52 days.

The age of market squid is determined using statoliths, balance structures analogous to otoliths in fish. Rings are deposited daily on statoliths and used

to determine the market squid life span. Daily ring deposition has been validated for several squid species including *D. opalescens* and other members of the family Loliginidae and has been shown to be an accurate method for ageing squid (Jackson and Domeier 2003; Hurley et al. 1985; Lipinski 1986; Jackson 1990a, 1990b, 1994, 1998; Bettencourt et al. 1996; Spratt 1978).

Butler et al. (2001) found that market squid growth increases with age and is best described with a power function:

$$\text{DML (mm)} = 0.001342 * \text{Age}^{2.132}$$

where DML is dorsal mantle length in mm and age is in days ($r^2 = 0.95$, $df = 275$, $P < 0.001$). Paralarvae growth is slow [0.05 mm DML/day] during the first month, but growth rates increase dramatically as squid mature. Growth may vary based on location and environmental conditions (Jackson 1994; Butler et al. 1999), with lower growth observed in years with warmer water conditions, likely due to a reduction in food availability (Jackson and Domeier 2003). Macewicz et al. (2004) fit an exponential function to describe the weight-length relationship for female squid:

$$W = 0.000051 L^{2.8086}$$

Because the body weight of squid declines as eggs are released, the weight-length function was fit to data for mature females that had not yet spawned (pre-ovulatory females).

Market squid begin to reach sexual maturity 5 or 6 months after hatching (Butler et al. 1999; Butler et al. 2001). Once sexually mature, market squid begin to recruit to the fishery and are fully vulnerable by 6 months of age (Butler et al. 2001). Maturation is thought to be size rather than age dependent, occurring at approximately 100 mm (4 in) in DML for females (Butler et al. 1999; Jackson and Domeier 2003; Maxwell et al. 2005). Females may lay a large proportion of their eggs within the first few days following maturity (Macewicz et al. 2004) and gradually lay less throughout the spawning window and prior to dying.

Squid are a short-lived species, and the average age of squid taken in the fishery is 6 months (range 4 to 10 months) (Butler et al. 2001). Available age data exhibit little variation among months and suggest that a new cohort enters the fishery almost monthly. Figure 2-1 shows the age structure of the market squid catch by sex from port samples collected from November 1998 through July 2000. The mean age of harvested market squid was 188 days. More than 99% of the squid aged could be sexed, suggesting that the fishery primarily targets mature squid.

Statolith samples from the 2000-2024 commercial catch have not been aged, and thus it is not yet possible to tell if the age structure of the stock has changed over time. Because it is thought that size is a better indicator of sexual maturity, potential changes in both size and age structure of the stock could provide valuable insight into fishing mortality and natural mortality. Average size fluctuates between and among fishing seasons, which could be attributed to different cohorts (Protasio et al. 2014). However, since age data have not been analyzed, attributing size differences to different cohorts cannot be determined at present. Future analyses of collected statoliths would provide useful information.

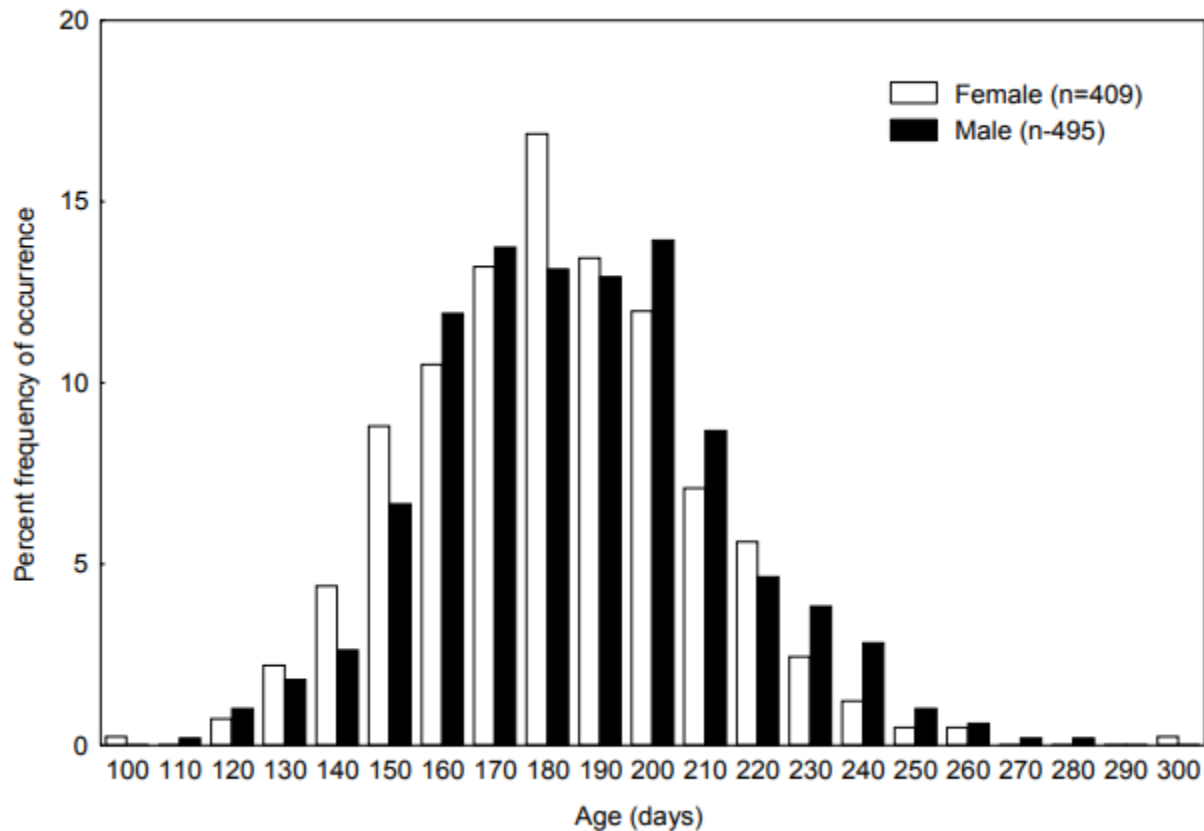


Figure 2-1. Number of market squid by age from port samples by sex. Port samples used to determine percent frequency of occurrence were collected from November 1998 through July 2000 (CDFW Port Sampling database).

2.4. Reproduction, Fecundity, and Spawning Season

While there are year-round reports of spawning along the coast, generally, in central California, spawning activity starts around April and ends in October. In southern California, spawning tends to begin around October and end in April or May. The seasonality of spawning between central and southern California is attributable to ocean bottom temperatures rather than any biological difference (Zeidberg et al. 2011b). During some years,

reproductive activity and landings may occur throughout most of the year along the coast. Year-round spawning in several areas statewide at different times of the year likely reduces the effects of poor local conditions on survival of eggs or hatchlings and indicates that stock abundance is not solely dependent on availability of squid from a single spawning area.

Spawning typically occurs at night but has been observed during daylight hours (Forsythe et al. 2004). Squid are terminal spawners, but females can spawn multiple times within a spawning period and may not die immediately after a single spawning event, as was previously believed (Hanlon et al. 2004).

Market squid aggregate to spawn, usually over sandy habitats where they deposit extensive egg masses. Mating takes place on spawning grounds but may also occur before squid move to their spawning sites. Gametes are exchanged directly, with male squid placing spermatophores with their hectocotylized arm into the mantle cavity of females and eggs are fertilized as they are extruded (Hurley 1977). Zeidberg et al. (2004) observed market squid mating in groups of 1 to 2 males per female and small males appeared to insert spermatophores into the mantles of females that were being held in a mating embrace by larger males. The observed mating interactions were termed “sneaker mating.”

Off California, a female squid produces approximately 20 egg capsules, with each capsule containing about 200 individual eggs that are suspended in a gelatinous matrix (Recksiek and Frey 1978). The number of egg cases deposited and the number of eggs within egg cases vary by locale and decline throughout the spawning season. Females attach each egg capsule individually to the bottom substrate. As spawning continues, mounds of egg capsules covering more than 100 square meters may be formed and appear to carpet the sandy substrate. After fertilization, embryonic development of egg cases in aquaria at 60.8°F (16.0°C) usually takes between 3 to 4 weeks, with hatching occurring on day 22 or 23 (Fields 1965). Hatching continues for about a week with numerous individuals appearing, but in decreasing volume. In cooler conditions the development time is probably at least a week longer and in warmer waters the longfin inshore squid (*Doryteuthis pealeii*) emerges after only 11 to 12 days of incubation (Fields 1965). While the embryo develops, considerable change takes place in the protective capsule. The capsules continue to take on water and when hatching begins, the volume and weight of each capsule reaches about five times its original value. When a juvenile squid is ready to hatch it makes an opening large enough to escape using strong mantle contractions and then becomes free-swimming. Based on laboratory observations, it is theorized that most of the juveniles emerge during the first several hours of darkness and with upward

swimming and tidal drift, they are able to clear the egg beds and spawning grounds before light (Fields 1965).

Macewicz et al. (2001a, 2001b, 2004) found that female squid have a fixed reproductive output and die before developing and spawning all possible eggs in their ovaries. The fecundity-size relationship was found to be linear, and the potential fecundity is calculated as 29.8 multiplied by the DML (in mm) (Macewicz et al. 2004). For an average female with a DML of 129.0 mm (5.1 in), the potential fecundity is 3,844 eggs. Dorval et al. (2013) found that the linear model did not account for a substantial amount of the total variation in potential fecundity and proposed using mean potential fecundity.

Market squid egg hatching rate is determined by temperature, with incubation time ranging from 22 to 90 days at temperatures ranging from 42.0 to 68.0 °F (5.6 to 20.0 °C) (Isaac et al. 2001). Eggs are commonly deposited in areas with water temperatures between 50 and 58 °F (10.0 to 14.4 °C), resulting in incubation periods lasting from 34 to 52 days.

2.5. Natural Mortality

Determining the natural mortality of marine species is important for understanding the health and productivity of their stocks. Natural mortality results from all causes of death not attributable to fishing such as age, disease, predation, or environmental stress. Natural mortality is generally expressed as a rate that indicates the percentage of the population dying in a year. Fish with high natural mortality rates must replace themselves more often and thus tend to be more productive. Natural mortality along with fishing mortality result in the total mortality operating on the fish stock.

Based on a short life span of 6-10 months, market squid appear to exhibit a very high natural mortality rate (Macewicz et al. 2004) and the adult population is composed of almost entirely new recruits, suggesting that the entire stock is replaced annually, even in the absence of fishing. Natural mortality is attributed in part to heavy predation, as market squid are prey for a variety of fish and marine mammal predators in the California Current Ecosystem (CCE) (Figure 2-2). However, market squid also die shortly after spawning occurs, and it is thought that their fast growth and high metabolic rates contribute to these high natural mortality rates (O'Dor and Webber 1986).

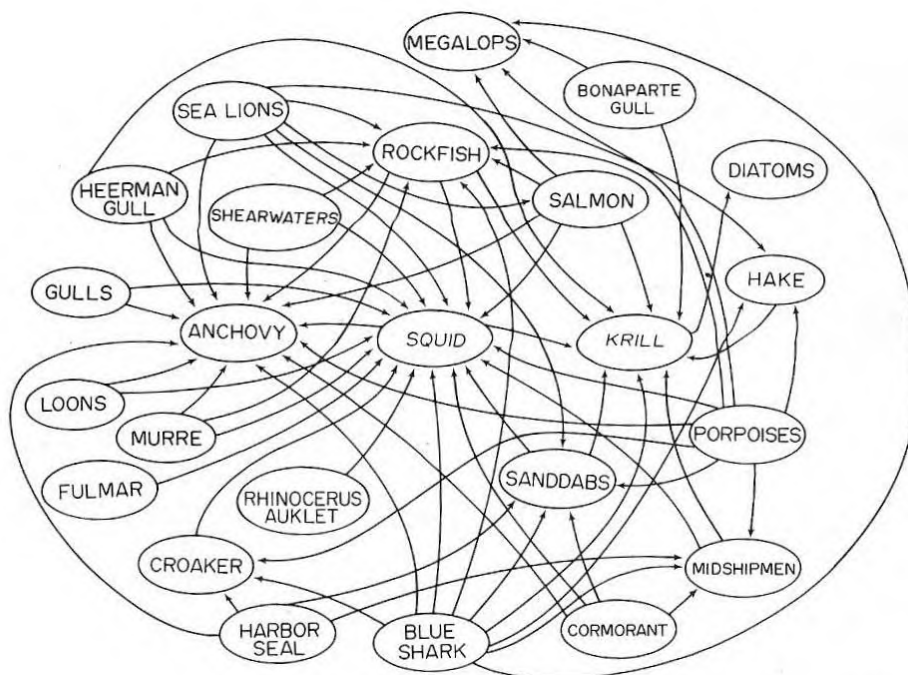


Figure 2-2. Food web for market squid, *Doryteuthis (Loligo) opalescens*, involving commercially important or abundant fish, birds, and marine mammals (from Morejohn, et al. 1978).

No studies directly estimate the natural mortality rate of squid. However, the total mortality has been estimated to range from 0.3 to 0.6 per month based on squid ageing data (Maxwell et al. 2005; Butler et al. 2001)

2.6. Associated Species

Several marine worms use squid as a host species; larval nematodes (roundworms), cestodes (tapeworms) and polychaetes (bristleworms) all have been recovered from squid and/or squid eggs. Nematodes, cestodes, and their larval stages have been found in market squid (Walthers and Gillespie 2002). In Monterey Bay, Riser (1949) cited infestation of squid by two types of plerocercoid larvae. These Plerocercoid larvae are tetraphyllidean cestodes that infest the large intestine of the squid. At Point Mugu, squid sampled from a commercial seafood outlet exhibited infestation by larval cestodes (orders Tetraphyllidea and Pseudophyllidea) and nematodes. Parasites were found to infect the eye, stomach, intestines, body cavity and tissues at a rate of 76.9% (Dailey 1969). The polychaete worm *Capitella ovincola* was thought to be a predator of market squid eggs, because it has been found inside squid egg capsules (Fields 1965). In fact, *C. ovincola* eat the outer casing of the egg capsule, not the embryo itself (Zeidberg et al. 2011a). *C. ovincola* does not appear to affect squid fitness either by decreasing the egg hatching rate or triggering premature hatching (Morris et

al. 1980) and was found to slightly increase the hatch rate of market squid eggs reared under laboratory conditions, suggesting a symbiotic relationship (Zeidberg et al. 2011a).

2.7. Predator/Prey Relationships

2.7.1. Market Squid as Predators

Market squid feed on a variety of prey during their life cycle. As larvae and juveniles, squid consume copepods and euphausiids. As adults, market squid feed on fish, polychaete worms, squid (cannibalism), and crustaceans such as shrimp and pelagic red crab. Market squid feed with and likely upon coastal pelagic species and have also been found in commercial catches of northern anchovy, Pacific sardine, Pacific herring (*Clupea pallasii*), Pacific mackerel, jack mackerel and Pacific saury (*Cololabis saira*) where they feed with and most likely upon these fish (Fields 1965).

Prey composition fluctuates with squid age, size, by depth and location, and reproductive status (Karpov and Cailliet 1979). The availability of prey and the behavior of market squid at different depths and locations may influence feeding behavior. Karpov and Cailliet (1978, 1979) found that crustaceans and cephalopod fragments were ingested at higher frequencies on spawning grounds than on non-spawning grounds. Inshore versus offshore samples of squid indicated differences in diet composition. In deeper waters, euphausiids and copepods were dominant prey items, while true cannibalism (intake of whole cephalopods) and fish consumption dominated in shallow waters.

2.7.2. Market Squid as Forage

Market squid are an integral part of the food web to many marine organisms. A meta-analysis of dietary studies in the CCE found market squid in the diet of 51 predators (Szoboszlai et al. 2015). Fish, seabirds, and marine mammals all consume squid as a prey item, as does the Humboldt squid (*Dosidicus gigas*) (Stewart et al. 2014). Bat stars (*Patiria miniata*), Kellet's whelks (*Kelletia kelletii*), and chestnut cowries (*Cypraea spadicea*) have also been observed to eat market squid eggs (Zeidberg et al. 2004).

Squid has been documented as a prevalent dietary component of marine mammals (Sinclair 1992; Fields 1965) and seabirds (Morejohn et al. 1978). In Monterey Bay, 19 species of fish were found to feed on market squid, including many commercially fished species such as Pacific bonito (*Sarda chiliensis*), salmon, halibut, and tuna (Figure 2-2) (Fields 1965; Morejohn et al. 1978). Predators from many trophic levels consume both small pelagic fishes,

such as northern anchovy and Pacific sardine, and market squid as either a primary or supplementary food source (Table 2-1).

Table 2-1. Known predators of coastal pelagic species, including market squid. (From Table 1.1.2-1, Federal CPS FMP; Table 7A from CDFG Report to the Legislature).

Common Names	Scientific Names
MARINE MAMMALS	--
Northern fur seal	<i>Callorhinus ursinus</i>
Guadalupe fur seal*	<i>Arctocephalus townsendi</i>
Steller sea lion	<i>Eumetopias jubatus</i>
California sea lion	<i>Zalophus californianus</i>
Northern elephant seal	<i>Mirounga angustirostris</i>
Harbor seal	<i>Phoca vitulina</i>
Common dolphin	<i>Delphinus delphis</i>
Harbor porpoise	<i>Phocoena phocoena</i>
Dall's porpoise	<i>Phocoenoides dalli</i>
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>
Common? Bottlenose dolphin	<i>Tursiops truncatus</i>
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>
Blue whale*	<i>Balaenoptera musculus</i>
Fin whale*	<i>Balaenoptera physalus</i>
Sei whale	<i>Balaenoptera borealis</i>
Common? Minke whale	<i>Balaenoptera acutorostrata</i>
North Pacific right whale*	<i>Eubalaena japonica</i>
Humpback whale*	<i>Megaptera novaeangliae</i>
Gray whale	<i>Eschrichtius robustus</i>
MARINE BIRDS	--
Black-footed albatross	<i>Phoebastria nigripes</i>
Northern fulmar	<i>Fulmarus glacialis</i>
Sooty shearwater	<i>Ardenna grisea</i>
Manx shearwater	<i>Puffinus puffinus</i>
Short-tailed shearwater	<i>Ardenna tenuirostris</i>
Pink-footed shearwater	<i>Ardenna creatopus</i>
Leach's storm petrel	<i>Hydrobates leucorhous</i>
Ashy storm petrel*	<i>Hydrobates homochroa</i>
Black storm petrel	<i>Hydrobates melania</i>
Brown pelican*	<i>Pelecanus occidentalis</i>
Double-crested cormorant	<i>Nannopterum auritum</i>
Brandt's cormorant	<i>Urile penicillatus</i>
Pelagic cormorant	<i>Urile pelagicus</i>
Glaucous-winged gull	<i>Larus glaucescens</i>
Western gull	<i>Larus occidentalis</i>

Common Names	Scientific Names
Heermann's gull	<i>Larus heermanni</i>
Ring-billed gull	<i>Larus delawarensis</i>
California gull	<i>Larus californicus</i>
Black-legged kittiwake	<i>Rissa tridactyla</i>
Common murre	<i>Uria aalge</i>
Pigeon guillemot	<i>Cepphus columba</i>
Marbled murrelet*	<i>Brachyramphus marmoratus</i>
Craveri's murrelet	<i>Synthliboramphus craveri</i>
Scripps's murrelet**	<i>Synthliboramphus scrippsi</i>
Guadalupe murrelet**	<i>Synthliboramphus hypoleucus</i>
Ancient murrelet	<i>Synthliboramphus antiquus</i>
Cassin's auklet	<i>Ptychoramphus aleuticus</i>
Rhinoceros auklet*	<i>Cerorhinca monocerata</i>
Horned puffin	<i>Fratercula corniculata</i>
Tufted puffin*	<i>Fratercula cirrhata</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Osprey	<i>Pandion haliaetus</i>
Elegant tern*	<i>Thalasseus elegans</i>
Caspian tern	<i>Hydroprogne caspia</i>
Forster's tern	<i>Sterna forsteri</i>
Least tern*	<i>Sternula antillarum</i>
MARINE FISH	--
Northern anchovy	<i>Engraulis mordax</i>
Pacific sardine	<i>Sardinops sagax</i>
Pacific whiting	<i>Merluccius productus</i>
Common thresher shark	<i>Alopias vulpinus</i>
Shortfin Mako shark	<i>Isurus oxyrinchus</i>
Soupfin shark	<i>Galeorhinus galeus</i>
Blue shark	<i>Prionace glauca</i>
Pacific electric ray	<i>Torpedo californica</i>
Silver (coho) salmon*	<i>Oncorhynchus kisutch</i>
King (Chinook) salmon*	<i>Oncorhynchus tshawytscha</i>
Steelhead*	<i>Oncorhynchus mykiss irideus</i>
Rockfish (many species)	<i>Sebastes spp.</i>
Striped bass	<i>Morone saxatilis</i>
Barred sand bass	<i>Paralabrax nebulifer</i>
Kelp bass	<i>Paralabrax clathratus</i>

Common Names	Scientific Names
Spotted sand bass	<i>Paralabrax maculatofasciatus</i>
Ocean whitefish	<i>Caulolatilus princeps</i>
Jack mackerel	<i>Trachurus symmetricus</i>
Yellowtail	<i>Seriola dorsalis</i>
White seabass	<i>Atractoscion nobilis</i>
Queenfish	<i>Seriphus politus</i>
California corbina	<i>Menticirrhus undulatus</i>
White croaker	<i>Genyonemus lineatus</i>
Surfperches (many species)	<i>Embiotocidae</i>
Pacific barracuda	<i>Sphyræna argentea</i>
Pacific (chub) mackerel	<i>Scomber japonicus</i>
Pacific bonito	<i>Sarda chiliensis</i>
Albacore	<i>Thunnus alalunga</i>

Common Names	Scientific Names
Pacific bluefin tuna	<i>Thunnus orientalis</i>
Swordfish	<i>Xiphias gladius</i>
Striped marlin	<i>Kajikia audax</i>
Giant seabass	<i>Stereolepis gigas</i>
Lingcod	<i>Ophiodon elongatus</i>
Scorpionfish	<i>Scorpaena guttata</i>
Dogfish	<i>Squalus spp.</i>
INVERTEBRATES	--
Market squid	<i>Doryteuthis (Loligo) opalescens</i>
Ocean squids	Family: <i>Loliginidae</i>

* Endangered, threatened, or candidate species

** Updated in 2025; Split from Xantus's murrelet in 2012 due to genetics, morphological differences, and apparent lack of interbreeding at areas where the two are sympatric (Birt et. al 2012). Additionally, endangered, threatened, or candidate species.

The proportion of squid in predators' diets varies dramatically between species, geographical location, and environmental conditions. Most squid predators are not squid specialists - squid is rarely the sole prey item. Squid cannot be relied on as a stable food source because of its highly variable abundance and limited energetic value (O'Dor and Webber 1986). Therefore, squid predators often switch to more abundant or energetically profitable prey species (Ainley et al. 1996; Sydeman et al. 1997), or target squid when they are most abundant during spawning aggregations and minimal energy is needed for capture.

In terms of frequency-of-occurrence, the presence of squid in diets varies dramatically. For seabirds such as the common murre (*Uria aalge*), squid composes 6 to 20% of the diet (by weight) depending on season and is usually ranked 3rd or 4th after northern anchovy, Pacific herring, and shiner surfperch (*Cymatogaster aggregata*) (Ainley et al. 1996). For diving birds such as rhinoceros auklets (*Cerorhinca monocerata*), common murrelets, Arctic loons (*Gavia arctica*), and Brandt's cormorants (*Phalacrocorax penicillatus*), the frequency-of-occurrence of squid in the diet can range from 33 to 85% (Baltz and Morejohn 1977). For plunging, surface feeding birds, such as shearwaters and gulls, the frequency-of-occurrence ranges from 0-67% (Baltz and Morejohn 1977).

Market squid are also prey for commercial and recreational fishes, such as white seabass (*Atractoscion nobilis*), yellowtail (*Seriola dorsalis*), kelp bass (*Paralabrax clathratus*), barred sand bass (*Paralabrax nebulifer*), Pacific barracuda (*Sphyræna argentea*), California halibut (*Paralichthys californicus*), and other nearshore species.

For Chinook salmon (*Oncorhynchus tshawytscha*), squid composed only 7 to 9% of diet (by volume) and ranked 3rd or 4th behind northern anchovy,

euphausiids, and juvenile rockfish depending on location (Morejohn et al. 1978). At other locations along the west coast, squid is not a significant Chinook salmon prey item since they prey mainly on fish (Groot and Margolis 1991). For chilipepper rockfish (*Sebastes goodei*), squid ranked 3rd behind juvenile rockfish and other fishes (Morejohn et al. 1978). Other fish predators in which squid ranked high as a prey item include mainly bottom dwelling species such as curlfin sole (*Pleuronichthys decurrens*), speckled sanddab (*Citharichthys stigmaeus*), Pacific sanddab (*Citharichthys sordidus*), lingcod (*Ophiodon elongatus*), petrale sole (*Eopsetta jordani*), and Pacific halibut (*Hippoglossus stenolepis*) (Morejohn et al. 1978). Several pelagic species also feed on squid when available such as blue shark (*Prionace glauca*), common thresher shark (*Alopias vulpinus*), and albacore tuna (*Thunnus alalunga*) (Morejohn et al. 1978).

Squid occurs in 35 to 44% of California sea lion (*Zalophus californianus*) scat samples collected at rookery sites in the SCB, which can represent volumes as high as 27% of the diet by weight in non-El Niño years and 16% in El Niño years (Lowry and Carretta 1999). In terms of prey rank, squid was either the primary or secondary sea lion prey item after northern anchovy, depending on location and environmental conditions. Sea lions have a diverse diet and are opportunistic feeders suggesting that an individual can fulfill intake needs by combining multiple prey sources when one energy taxa is absent (Fiechter et al. 2016).

Fishery-independent data suggest that squid distribution is widespread, fishing does not occur in all areas of distribution, and not all spawning grounds are targeted. Historical evidence from research cruises along the west coast, as well as recent catch data, suggests that squid biomass may be very large at times and distributed widely along the entire west coast (CCIEA 2023), suggesting that a large portion of the squid biomass is available to other trophic levels (Figure 2-3).

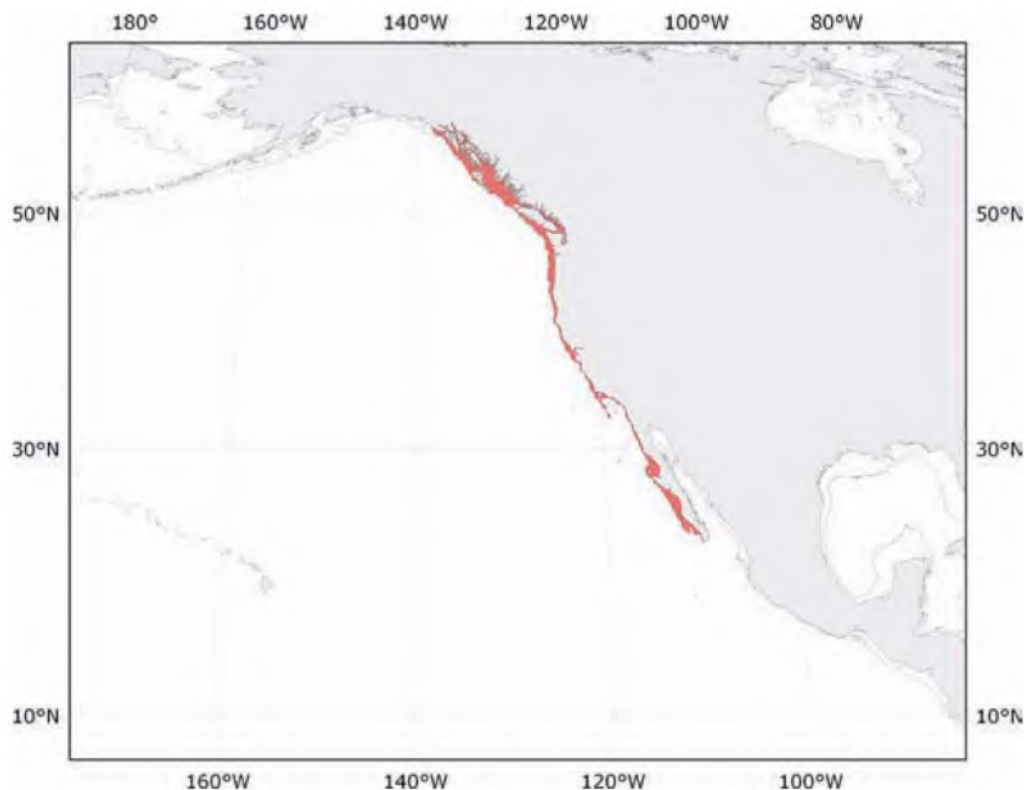


Fig. 92 *Doryteuthis (Amerigo) opalescens*

Known distribution

Figure 2-3. Range of market squid (Reproduced from Jereb et al. 2010).

2.7.3. Competition

Market squid feed with a variety of coastal pelagic finfish species, namely anchovies, sardines, herring, and mackerel. Market squid are often found together in commercial catch targeting species; however, little information is available regarding the competition for resources. Dense spawning aggregations of market squid may result in an increased incidence of cannibalism (Karpov and Cailliet 1978).

Trophic interactions between squid and higher-trophic-level fish are still not fully understood. It is not known if the value of market squid as a food source to adult coastal pelagic finfish predators outweighs the negative effects of predation by squid on larvae and juveniles of those species, in addition to competitive removal of phytoplankton, zooplankton and other fish.

2.8. Critical Habitat

The description and identification of Essential Fish Habitat (EFH) for market squid was updated through the federal fishery management process in 2023. The CPS FMP describes the east-west geographic boundary from the

shoreline along the California, Oregon, and Washington coast offshore to the limits of the EEZ and above the thermocline, where sea surface temperatures range between 44-75°F (7-24°C). This definition includes U.S. waters of Puget Sound and the Salish Sea and excludes other estuarine waters on the Pacific Coast. Market squid EFH also includes soft, sandy substrates 13 m to 93 m (43 ft to 305 ft) of depth for spawning adults and the egg capsule stage.

Market squid inhabit the inshore and offshore waters of the California Current from British Columbia to Baja California. The California Current is a region of transport, coastal jets, divergence, and upwelling. Changes in the Pacific Basin atmospheric pressure systems result in seasonal and interannual environmental variability within the CCE. Variations are caused by local winds and Ekman transport, flows of the equatorward California Current, the poleward undercurrent, and the inshore countercurrent. Temporal variations associated with the California Current are on time scales of several years to decades [i.e., the El Niño Southern Oscillation (ENSO) and cold vs. warm water regimes]. ENSO and other temperature related events markedly alter flow and temperature of currents within the CCE.

Refuges, preserves and MPAs are areas that are legally defined and regulated by the state or federal government, with the primary intent of managing areas for their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities. National marine sanctuaries specifically prohibit exploring for, developing, or producing oil, gas, or minerals within their boundaries. Three national marine sanctuaries, the Channel Islands National Marine Sanctuary, Chumash Heritage National Marine Sanctuary and the Monterey Bay National Marine Sanctuary encompass the main fishing areas for market squid.

Non-spawning market squid are pelagic and believed to be associated with the deep scattering layer that migrates vertically to the upper levels of the water column at night. Spawning occurs over a wide depth range, but the extent and significance of spawning in deep water are unknown. Known market squid spawning grounds are characterized by a sandy substrate in shallow waters; major spawning grounds fished in California are located in Monterey Bay and near the Channel Islands. Egg cases have been found at depths of 792 m (2,598 ft). Adults and juveniles prefer oceanic salinities and are most abundant between temperatures of 50-60°F (10-16°C) (Roper and Sweeney 1984).

2.9. Status of the Stocks

Market squid population dynamics are poorly understood. Some information exists on the coastwide distribution and abundance of market squid from

fishery-independent midwater and bottom trawl surveys aimed at assessing other species. Because fishing activity occurs only on shallow-water spawning aggregations, it is not apparent if landings reflect availability to the fishery or overall stock size, since squid have been documented at greater depths using other gear.

Historically, the squid resource was considered to be underutilized. Until improved estimates of abundance are available, the true status of the population will remain unknown. The CPS FMP required that MSY be established for all species in the plan (PFMC 2023). Setting MSY for market squid has proven problematic because an accurate biomass has yet to be determined. Hence, the PFMC approved the use of egg escapement as a proxy for MSY for the market squid fishery. Egg escapement is the number (or proportion) of a female squid's potential lifetime fecundity that she is able to spawn, on average, before being taken in the fishery. The MSY control rule for market squid is founded generally on conventional spawning biomass “per recruit” model theory (Gabriel et al. 1989; Macewicz et al. 2004). Specifically, the MSY control rule for market squid is based on evaluating levels of egg escapement associated with the exploited population. The estimates of egg escapement are evaluated in the context of a “threshold” that is believed to represent a minimum level that is considered necessary to allow the population to maintain its level of abundance into the future (e.g., allow for “sustainable” reproduction year after year) (PFMC 2023). The threshold is currently set to a level of egg escapement of at least 30%. Egg escapement is reported in the Department’s online Market Squid Enhanced Status Report (<https://marinespecies.wildlife.ca.gov/market-squid/management/>).

Therefore, the Overfishing Fishing Limit and Acceptable Biological Catch for market squid are an F_{MSY} proxy resulting in egg escapement $\geq 30\%$. The egg escapement model, as a proxy for MSY, was intended to be a temporary measure until an acceptable biomass estimate could be determined for market squid. Since an accurate biomass estimate has not yet been developed for market squid, NOAA and the Department continue to improve and refine the egg escapement method (Dorval et al. 2024).

Notably, the California market squid fishery has been certified as sustainable by the Marine Stewardship Council (MSC), an independent international non-profit organization with a mission to end overfishing and ensure seafood is fished sustainably (MSC 2023). The MSC uses a comprehensive standard and review process, which engages industry participants, external scientists, and management agencies to determine whether a fishery can be certified as sustainable. The review concluded that the basis of the proxy indicator used to assess stock status (egg escapement monitoring) is well established, and

appropriate for the biology of the stock. The review found that ecological monitoring is broad in scope, and a great deal of quantitative information is available showing that the fishery is highly unlikely to disrupt ecosystem structure and function under present conditions. The review also noted that the combination of gear and fishing methods is selective and allows larger animals to be released alive, thus limiting the impacts to endangered, threatened, or protected species. Finally, the review concluded that the market squid fishery exhibits an effective legal system and framework for cooperation that is transparent in its process, and with the roles and responsibilities of those involved in the fishery's management.

2.10. Areas Involved

Two major fishery areas account for the majority of landings in California. The northern fishery is centered in Monterey Bay, and squid are landed primarily at Monterey and Moss Landing. The northern fishery has operated predominately within a half mile of the Monterey Bay shoreline, and has expanded to other areas of the bay. The southern fishery targets a multitude of fishing spots including the Channel Islands and coastal areas from Point Conception south to La Jolla. Squid are landed chiefly at the ports of Ventura, Port Hueneme, San Pedro, and Terminal Island.

2.11. History of Exploitation

The commercial fishery has a long history in California, dating back to the mid- nineteenth century, although annual catches were usually less than 10,000 short tons (tons) until the 1960s (Table 2-2). During the 1980s, California's squid fishery grew rapidly in fleet size and landings when international demand for squid increased due to declining squid fisheries in other parts of the world (CDFG 2001). In 1997, a permit was created for the squid fishery and the rapid growth of fleet size was halted by a moratorium on new permits. Although it is not known when recreational fisheries in California started to use market squid as bait, recreational fisheries currently use market squid as either live or dead bait throughout the state.

Table 2-2. Historical market squid landings in tons for California divided at Point Conception into north and south. The market squid season is from 1 April through 31 March of the following year (MLDS).

Season	North	South	Total landings
1927-1928	1,567	4	1,571
1928-1929	686	44	730
1929-1930	2,303	16	2,319
1930-1931	5,494	16	5,510
1931-1932	792	71	863
1932-1933	2,072	28	2,100
1933-1934	430	4	434
1934-1935	736	19	755
1935-1936	329	19	347
1936-1937	451	17	469
1937-1938	245	61	306
1938-1939	754	11	765
1939-1940	522	53	575
1940-1941	818	86	904
1941-1942	694	47	741
1942-1943	406	34	440
1943-1944	4,529	18	4,546
1944-1945	5,435	38	5,472
1945-1946	7,586	27	7,613
1946-1947	19,777	18	19,795
1947-1948	8,728	64	8,792
1948-1949	7,599	59	7,658
1949-1950	3,087	2	3,089
1950-1951	2,997	2	2,999
1951-1952	5,844	374	6,219
1952-1953	1,746	2,649	4,394
1953-1954	2,076	391	2,467
1954-1955	3,772	77	3,849
1955-1956	6,714	119	6,833
1956-1957	9,828	478	10,306
1957-1958	5,496	1,753	7,249
1958-1959	1,902	2,848	4,750
1959-1960	7,140	94	7,235
1960-1961	1,103	996	2,099
1961-1962	1,987	4,075	6,062
1962-1963	2,886	2,028	4,914
1963-1964	3,174	1,641	4,815
1964-1965	4,551	5,223	9,774
1965-1966	4,439	4,508	8,947
1966-1967	5,597	4,211	9,808
1967-1968	5,617	6,088	11,705
1968-1969	7,289	2,668	9,957
1969-1970	5,780	6,186	11,966
1970-1971	4,314	8,861	13,175
1971-1972	8,328	4,475	12,803
1972-1973	6,124	5,057	11,181
1973-1974	621	7,696	8,317
1974-1975	7,248	5,302	12,549
1975-1976	2,495	10,563	13,058

Season	North	South	Total landings
1976-1977	2,511	6,587	9,098
1977-1978	2,235	12,050	14,285
1978-1979	10,343	8,680	19,024
1979-1980	14,169	7,213	21,381
1980-1981	7,860	12,087	19,947
1981-1982	14,132	11,700	25,833
1982-1983	11,697	1,516	13,213
1983-1984	1,061	27	1,087
1984-1985	549	804	1,354
1985-1986	4,276	10,100	14,376
1986-1987	6,967	18,636	25,603
1987-1988	6,632	18,582	25,214
1988-1989	5,765	42,430	48,195
1989-1990	7,829	25,222	33,051
1990-1991	8,871	23,602	32,472
1991-1992	9,013	29,653	38,666
1992-1993	9,450	9,343	18,793
1993-1994	10,012	44,440	54,452
1994-1995	19,103	44,489	63,592
1995-1996	3,676	90,157	93,833
1996-1997	5,828	118,481	124,309
1997-1998	9,275	1,623	10,898
1998-1999	26	11,673	11,699
1999-2000	308	126,464	126,772
2000-2001	7,730	115,681	123,411
2001-2002	10,094	92,621	102,715
2002-2003	27,828	19,166	46,994
2003-2004	19,673	40,803	60,476
2004-2005	7,303	49,270	56,572
2005-2006	2,206	79,902	82,108
2006-2007	630	37,736	38,366
2007-2008	35	50,600	50,635
2008-2009	923	39,223	40,146
2009-2010	967	92,637	93,604
2010-2011	23,568	110,074	133,642
2011-2012	17,061	117,957	135,018
2012-2013	21,360	84,727	106,087
2013-2014	27,607	87,494	115,101
2014-2015	63,731	50,841	114,573
2015-2016	22,324	18,283	40,607
2016-2017	15,037	27,360	42,397
2017-2018	10,934	62,768	73,702
2018-2019	15,780	18,491	34,271
2019-2020	3,066	12,147	15,213
2020-2021	16,865	3,904	20,768
2021-2022	23,785	39,069	62,854
2022-2023	4,679	51,700	56,379
2023-2024*	1,090	28,678	29,768

*Preliminary data.

2.11.1. Description of User Groups

2.11.1.1. Commercial Fishery

California's market squid fishery began in 1863; Chinese immigrants harvested small quantities of squid from Monterey Bay (Dickerson and Leos 1992). Skiffs were used to encircle a net around another skiff that used a torch to attract the squid to the surface. The product was dried and exported to China. In 1905, Italian immigrant fishermen introduced the more efficient lampara net. The lampara net (Table 2-3) was the only legal form of round haul gear in the southern bight of Monterey Bay until 1989. Once purse and drum seines were legalized for use in this district, the squid fleet switched gear types and the lampara became obsolete. In Fishing Districts 16 and 17 (Monterey and Santa Cruz Counties), attracting lights were prohibited between 1959 and 1988; in 1989 lights were again allowed in the northern fishery. Landings in the northern fishery had not expanded until the 2002-2003 season, while the number of vessels making landings has fluctuated from year-to-year (Figure 2-4).

Table 2-3. Description of market squid fishery gear types.

Gear type	Description
Purse seine	A round haul net with a "purse" line to close the bottom of the net. One end is attached to a skiff and the deploying vessel encircles the squid. The other end of the net is brought to the deploying vessel and the purse line is drawn, closing the bottom of the net to prevent escaping squid.
Drum seine	Like a purse seine, but a large drum stores, deploys and retrieves the net.
Lampara	A round haul net with the sections of netting made and joined to create bagging. The net is pushed beneath squid to encircle it from each side. The "wings" of the net are pulled back to the boat and the squid end up in the bag portion of the net. This gear has no arrangement for pursing.
Brail	A large dip net sometimes used with the assistance of the vessel's hydraulics.

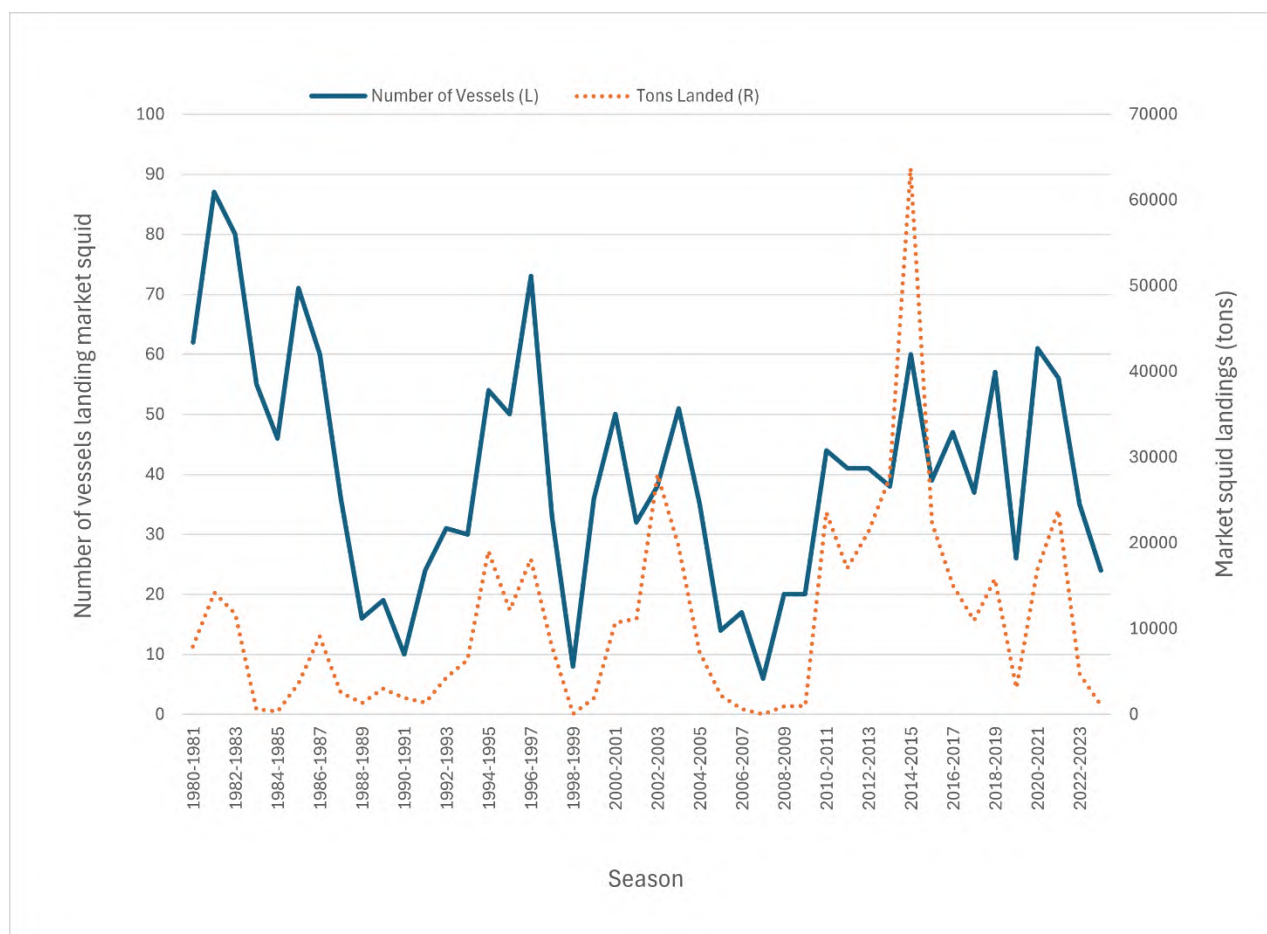


Figure 2-4. Number of vessels and market squid landings by season for Northern California (MLDS).

During the 1970s brail vessels were the major harvesters in the southern California market squid fishery, using a power-assisted brail or dip net in conjunction with attracting lights (Kato and Hardwick 1975). In 1977, the fleet shifted from using brail vessels to purse seine vessels (Vojkovich 1998). Vessels brailing for squid still land a small portion of the catch (less than 3.0% in 2023-2024 season). Brailing vessels have the advantage of fishing in some areas that are closed to roundhaul gear and can land smaller volumes at a higher value. However, purse seine and drum seine vessels are more effective at landing large volumes of squid and by the early 1990s, the purse seine became the dominant gear on the entire coast, with the drum seine gaining popularity by the mid-1990s. As of the 2023-2024 season, purse and drum seine remain the dominant gear responsible for 97% of total landings (MLDS).

According to Department records during the drafting of the original MSFMP, the average purse seine vessel length was 18.9 m (62 ft) and 81 gross tons. The average hold capacity was 84 tons. The average purse seine net was 381 m (1250 ft) long with a depth of 48 m (156 ft). Gross tonnage (GT) is a volumetric measurement used as a proxy for harvesting capacity. At the start

of the 2024 squid fishing season, the average seiner was 18.4 m (60.28 ft) in length with an average GT of 83.6 tons. The average light and brail boat length was 13.5 m (44.4 ft) with an average GT of 46.5 tons for brail boats. The stretched mesh size is 1 ¼ - 1 ½ inch. Some vessels use refrigerated seawater to keep catch cold, while others (live bait vessels) use circulated seawater, brine or no cooling system at all. The fleet currently uses a combination of round haul gear (purse seine or drum seine) or brail/dip net to harvest squid. Lampara nets, a legal round haul gear, are mostly obsolete in the limited entry fishery. In the 2023 squid fishing season (April 1, 2023 to March 31, 2024), approximately 97% of directed landings (by weight) came from seine (purse or drum) fishing, and less than 3% from brail/dip net fishing. Nearly all vessels use side-scan sonar and fathometers.

In most cases, squid seiners work with light boats. A light boat is typically a smaller vessel with several high-powered lights located at various levels around the vessel. The purpose of the lights is to attract and aggregate spawning squid to surface waters. The light boat actively searches for squid. Once squid are located and aggregated, the light boat will signal the seiner to deploy its net, encircling the light boat, to catch the squid located under the lights.

The squid fishing income of the many seine vessels from southern California is often supplemented by participation in the tuna and CPS finfish fisheries. Many vessels in the southern fishery have homeports in the states of Alaska, Washington and Oregon and participate in salmon, herring and sardine fisheries. Historically, some vessels from the squid fishery participated in a high value sardine fishery off the Columbia River at the border of Oregon and Washington. Many light boats also participate in other local fisheries that do not use attracting lights such as herring, hook- and-line and gillnet. Declines in other fisheries led to an influx of fishing vessels from other states in the 1990s. Some fishermen have complained about user conflict and territorial disputes between “local” and out-of-state fishermen. Non-permitted vessels, including vessels in other fisheries (such as trawlers) that periodically catch small volumes of squid, are allowed to make incidental landings of up to two tons daily (Table 2-4).

Table 2-4. California landing receipt information for permitted and non-permitted vessels, 1980-1981 to 2002-2003 and 2020-2021 to 2023-2024. Vessels fishing for squid were not required to have a squid fishing permit until the 1998-1999 season; this table shows the activity by the vessels permitted through the 2023-2024 squid fishing season (MLDS).

Season	Landings (tons)	Landings (tons) by permittees	Percent landings made by permittees	Number of vessels	Number of permitted vessels
1980-1981	5,768	1,459	25.30%	55	10
1981-1982	25,851	11,349	43.90%	152	31
1982-1983	13,213	7,049	53.30%	125	28
1983-1984	1,087	740	68.10%	81	17
1984-1985	1,354	476	35.10%	95	21
1985-1986	14,376	8,833	61.40%	126	34
1986-1987	25,603	14,184	55.40%	122	34
1987-1988	25,214	15,547	61.70%	117	37
1988-1989	48,195	31,371	65.10%	119	43
1989-1990	33,051	22,705	68.70%	100	39
1990-1991	32,472	24,764	76.30%	102	41
1991-1992	38,666	30,503	78.90%	85	40
1992-1993	18,793	16,176	86.10%	82	40
1993-1994	54,452	44,335	81.40%	92	45
1994-1995	63,592	51,006	80.20%	110	54
1995-1996	93,833	72,749	77.50%	128	65
1996-1997	124,315	95,082	76.50%	143	77
1997-1998	10,898	9,917	91.00%	86	46
1998-1999	11,699	9,433	80.60%	117	67
1999-2000	127,248	107,934	84.80%	168	95
2000-2001	124,379	108,831	87.50%	152	85
2001-2002	102,667	96,757	94.20%	118	85
2002-2003	46,970	45,031	95.90%	105	78
2020-2021	20,768	20,767	99.90%	80	66
2021-2022	62,854	62,853	99.90%	87	77
2022-2023	56,379	56,378	99.90%	89	78
2023-2024*	29,768	29,767	99.90%	82	72

*Preliminary data.

The number of businesses purchasing squid has decreased since the early 1980s. Since the 2020-2021 season, the majority (90% or more) of the squid purchased was bought by 22 or fewer dealers. The other dealers purchase less than 100 tons per year.

2.11.1.2. Recreational Fishery

Market squid are taken by individual recreational anglers to use for bait or personal consumption. The primary recreational use of market squid is through the live bait commercial market, when fishing for other species like rockfish, white seabass, and other key recreational target species. Market squid used as recreational bait are primarily caught by bait haulers using seine, lampara or brail nets. The relatively small volume of squid caught for recreational use is a high value fishery, and supplies bait to recreational fisheries along the California coast, primarily in southern California (CDFG 2001). Recreational fishing effort for market squid is unable to be determined due to insufficient data. Live bait is sold from the catcher vessel at sea or from one of the many harbor-based bait dealerships. Recreational fishing vessels and privately owned skiffs catch their own squid bait by using attracting lights and brail nets and/or rod and reel. Historically, commercial squid catch had been voluntarily reported on live bait logs. Beginning in 2019, live bait logs were discontinued, and all live bait has since been reported on Department fish tickets. Additionally, light boat operators record live squid bait catch in their market squid logbooks. As reported in the Department's Marine Landings Data System (MLDS), less than 7 tons of market squid were taken as live bait in the 2022-2023 season, about 0.01% of the total harvest.

2.11.2. Fishing Effort

2.11.2.1. Commercial Fishing Effort

For decades, the market squid fishery has ranked as one of the highest in volume and value among the state's commercial fisheries: squid ranked number one in landings for the last 15 years and number one for dollars paid ex-vessel for 9 of those 15 years (CDFW 2024a). Although quite successful, the commercial squid fishery is unpredictable due to environmental and market conditions.

During an El Niño event (i.e., 1997-1998), squid availability declines along with fishing effort and catch. In years when squid are readily available, fishing effort appears to be determined by market conditions. Vessel participation is at its greatest during the late fall and early winter in southern California and during the summer for northern California (Figure 2-5). When squid processors have full freezers or the demand for California squid is low, vessels are generally put on market-imposed limits, and ex-vessel prices may be lowered. As squid availability declines as the season progresses, many vessels leave for other fisheries.

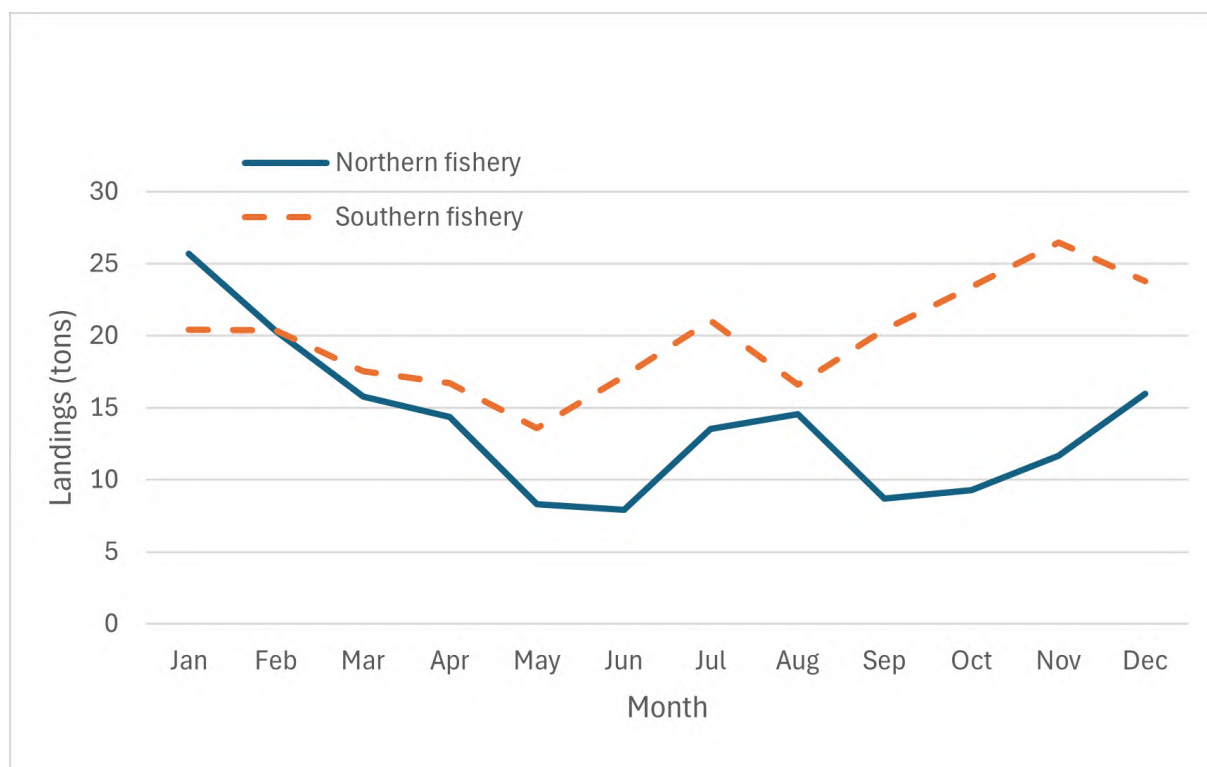


Figure 2-5. Average monthly landings in tons for the market squid fishery divided at Point Conception into northern and southern fisheries from 1969 through 2024 (MLDS).

Although market squid may be available in commercial quantities from Baja California to Oregon, the fishery is centered in two areas of California: Monterey Bay and the Channel Islands off southern California. The earliest fishery, in Monterey Bay, caught less than 1,000 tons per year from 1916 (when the Department began keeping records) to 1923 (Dickerson and Leos 1992). From 1924 to 1932, landings averaged more than 2,000 tons per year. Most of the catch from 1924 to 1932 was dried and exported to China; some was used domestically as canned or frozen product. The Asian market closed in 1933 due to financial conditions and the domestic market supported the Monterey fishery for many years. Landings in California were minimal until 1942 when demand from international aid programs triggered a rise in the need for squid the following year.

Landings peaked at close to 20,000 tons in the 1946-1947 season, then averaged 9,100 tons until the 1981-1982 season when greater than 25,000 tons were landed (Table 2- 2). Before the 1960s, the majority of squid landings were in the Monterey Bay area. In 1961, the fishery in southern California experienced a dramatic increase in landings.

The southern fishery centers around the northern Channel Islands, Santa Catalina Island, and southern coastal nearshore areas (Hill and Yaremko 1997).

Since the early 1980s, landings in southern California have exceeded those of the northern fishery (Figure 2-6; also see Table 2-2). Fishery landings reached a peak of 135,018 tons in the 2011-2012 season. The rapid fishery expansion of the last 40 years is a result of rising demand for squid in foreign markets, especially Europe and China.

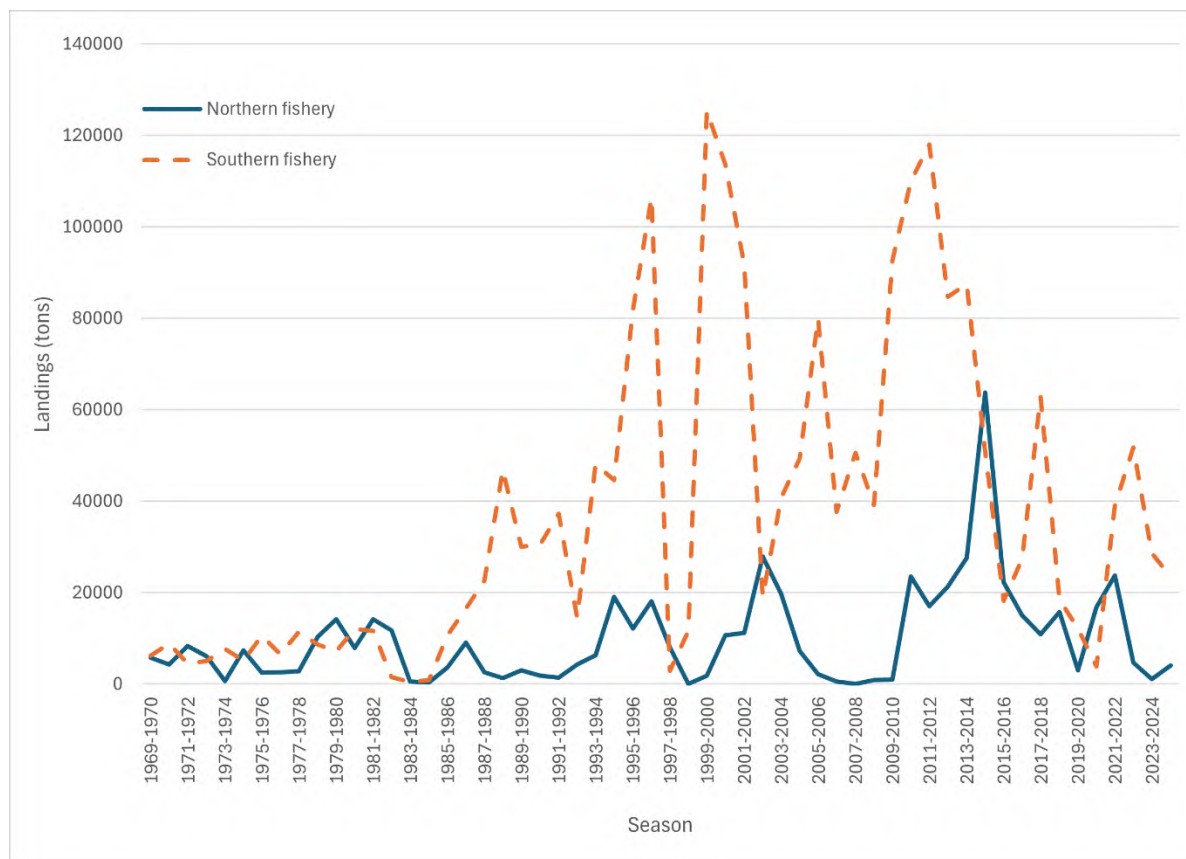


Figure 2-6. Market squid landings in tons from 1969-1970 through 2023-2024 seasons showing the increase in landings for the fishery south of Point Conception (MLDS).

Because the squid fishery was primarily an open-access fishery before 1998 and due to increases in statewide landings, legislation was enacted to ensure the sustainability of the squid resource and the marine life that depends on squid. The legislation required the purchase of an annual permit to land more than two tons or to attract squid by using light for purposes of commercial squid harvest. Eligibility has been determined by the purchase of a permit in the initial 1998-1999 season and subsequently from the previous year (Table 2-5). Ninety-two Market Squid Vessel Permits (12 of which were non-transferable and 3 of which were experimental), 14 Market Squid Brail Permits, and 61 Market Squid Light Boat Permits were issued (CDFW 2024b) when the original MSFMP was implemented in 2005. In the 2023-24 season, 68 Market Squid Vessel Permits and 28 Market Squid Light Boat Permits were issued. Since 2005, there have been 34 upgrades from light boat to brail

permits. The influx of brail permits, particularly from 2010 to 2013, was the direct result of light boat permit upgrades (Figure 2-7).

Table 2-5. Vessel, brail, and light boat permit numbers, 2000 to 2024 (CDFW Automated License Data System).

Year	Number of Vessel Permits	Number of Brail Permits	Number of Light boat Permits
2000	200	--	--
2001	196	--	--
2002	184	--	--
2003	174	--	--
2004	166	--	--
2005	92	22	61
2006	89	19	59
2007	88	23	58
2008	88	23	57
2009	80	21	57
2010	81	25	53
2011	77	37	41
2012	77	42	36
2013	74	44	34
2014	75	44	34
2015	75	44	34
2016	74	45	33
2017	74	45	33
2018	73	45	33
2019	71	46	32
2020	72	46	32
2021	71	46	32
2022	71	46	31
2023	69	47	30
2024	68	48	28

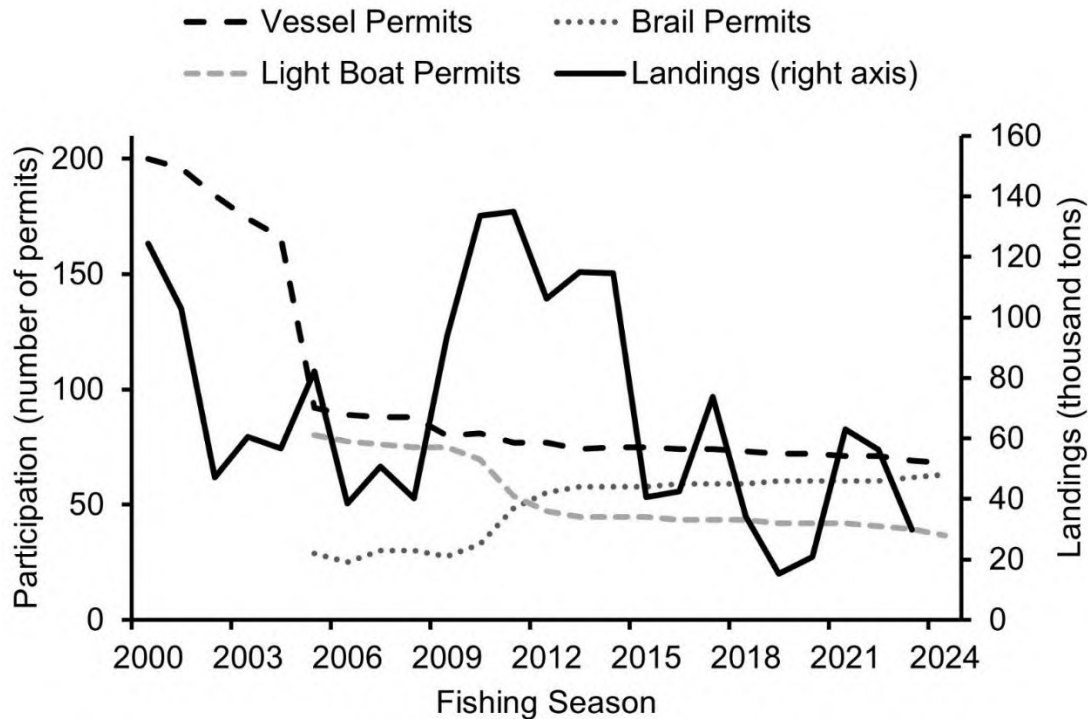


Figure 2-7. Market squid fishery participation (number of limited entry permits by type; left axis) and landings (thousand tons; right axis) from 2000 to 2024 fishing seasons (MLDS).

Of the 68 limited entry Market Squid Vessel Permits issued in 2024, 58 vessels reported market squid landings. As with many fisheries, a select number of vessels make the majority of the catch. Twenty-nine vessels made 80% of the landings (by weight) in 2023. Of the 48 brail permits issued in 2023, 14 brail-permitted vessels reported landing squid, suggesting that most brail-permitted vessels are solely acting as light boats with a portion catching squid for sale as live bait. Since 1998, the number of vessel and light boat owner permits has declined (Figure 2-8).

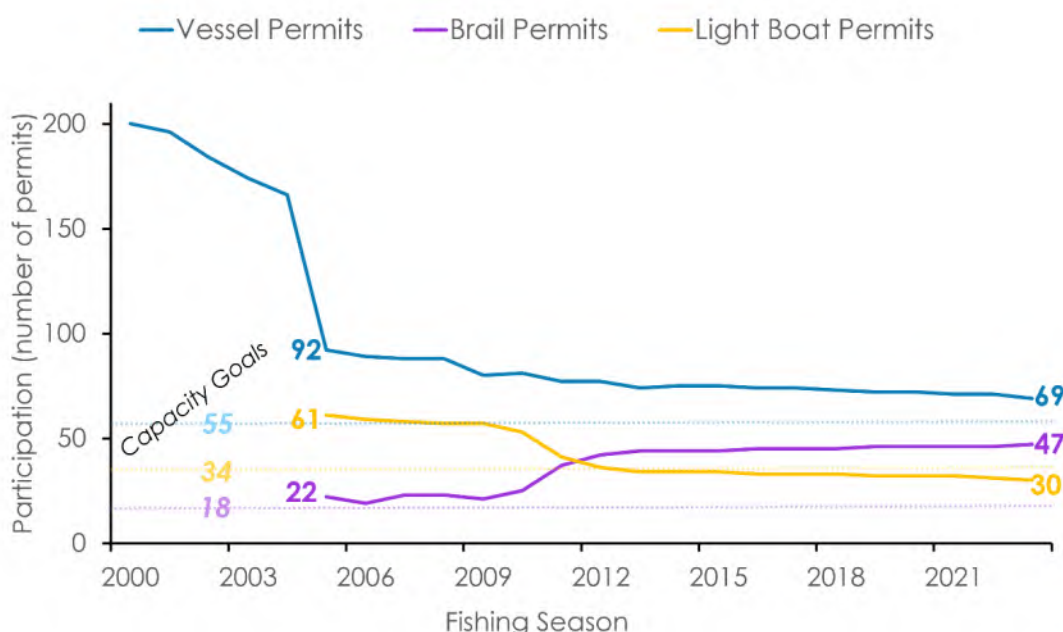


Figure 2-8. Participation (number of permits) in the commercial market squid restricted access fishery from 2000 to 2023. Capacity goals are delineated as dotted lines.

Despite the large number of permits issued, the current squid fleet consists of approximately 75 dedicated vessels. As with many fisheries, a select number of vessels made the majority of the catch. In the last four seasons, only 23, 30, 31, and 29 permitted vessels, respectively, made 75% of the catch.

2.11.2.2. Recreational Fishing Effort

Due to limited data, recreational fishing effort for market squid is unable to be determined. Live bait logs used by commercial vessels that supply bait to the recreational fishery to voluntarily report catch (e.g., northern anchovy, Pacific sardine) had regularly reported squid taken. Beginning in 2019, live bait logs were discontinued, and all live bait has been reported on electronic landing receipts. This landings information, however, does not provide data on effort of individual anglers taking market squid for their own consumption or use as bait. As reported in the Department's MLDS, less than 7 tons of market squid was taken as live bait in the 2022-23 season, about 0.01% of the total harvest.

2.12. Fishery Impacts

The adverse effects from fishing activities may include physical, chemical and biological alterations of habitat, loss of and or injury to benthic organisms, prey species and their habitat, and other components of the ecosystem. FMPs must include management measures that minimize adverse effects on

marine ecosystems from fishing to the extent practicable, and to identify conservation and enhancement measures. In addition, FMPs must contain an assessment of the potential adverse effects of all fishing activities and should consider the relative impacts of all fishing equipment used in varying habitats (PFMC 1998.)

Fishing for market squid could have important trophic implications and other ecological impacts. For example, the use of chains as a seine weight in the commercial fishery have the potential of digging deeper into the ocean floor than the suggested alternatives, such as small diameter cables (Hastings and MacWilliams 1999). Net bottoms may also scrape the ocean floor and do harm to squid eggs. A suggestion was previously made for a maximum depth and length of net to avoid disturbance to egg cases or to require that the net shall be no deeper than the depth fished. Further, squid caught which have not yet spawned by targeting schools of squid using sonar which are in transit to spawning grounds could impact the sustainability of the fishery. The MSFMP A-1 now includes special provisions that will help reduce the potential ecological impacts described above. Chain purse lines will no longer be allowed, and nets will be required to be pursed using a rib line. The removal of chain purse lines and the use of a rib line minimize the amount of scraping and were selected as the most appropriate option rather than net depth or length restrictions. Additional weekend closures will allow for more uninterrupted spawning time.

Bycatch is minimal in the commercial market squid fishery, although is not avoided entirely. While bycatch is known to occur in the fishery, certain species are required to be discarded by other statutes and regulations not encompassed by this FMP. Very few interactions have been observed between the California market squid fishery and threatened or endangered marine species of birds and mammals. The market squid fishery is classified as a Marine Mammal Protection Act Category III fishery in terms of impact on marine mammal stocks. A Category III fishery is defined by an annual mortality and serious injury of a stock is less than or equal to 1% of the Potential Biological Removal level (e.g., a remote likelihood of or no known incidental mortality and serious injury to marine mammals). According to the NOAA List of Fisheries for 2023, documented interactions in the California squid purse seine fishery include California sea lion, long-beaked common dolphin, Risso's dolphin, and short-beaked common dolphin (NOAA 2023).

From data gathered through the Department's dockside sampling program, 1,031 of 1,521 samples (68%) collected between January 2010 and December 2020 contained incidentally caught fish and/or invertebrates, excluding other CPS and squid egg cases (Table 2-6). Approximately 25.8% of sampled landings from July 2010 to December 2020 contained squid egg cases. Incidental catches of squid egg cases and other species increase in the squid fishery when the nets are set in shallower water (less than 40.0 m (131.2 ft)), where bottom contact may occur (Lutz and Pendleton 2001).

The species with the highest average frequency of occurrence from 2019 to 2023 include Pacific sardine, unspecified kelp, Pacific mackerel, jack mackerel, and unspecified jellyfish respectively (Table 2-6). Less than 2% of the sampled landings contained species that are prohibited from being landed (e.g., barracuda, salmon, and white seabass). Most commercial fishing for CPS finfish and market squid takes place south of Pigeon Point. The potential for taking salmon exists in this area, but diminishes south of Monterey, California (37° N latitude) (PFMC 2010). As noted above, other fishery regulations may prohibit the catch of certain species encountered as bycatch in the market squid fishery. In those cases, if species are taken incidentally but prohibited for catch, they must be discarded.

Table 2-6. Percent frequency of occurrence of bycatch in observed loads of California market squid from 2019 to 2023. Table values represent the presence of a species in observed loads for that year. Any species with fewer than 1% occurrence during the entire timeframe is not listed.

Note that presence of a species in dockside observations does not indicate the species is necessarily legal to possess or land in the market squid fishery.

Common name	Scientific name	2019	2020	2021	2022	2023
Finfish	--	--	--	--	--	--
Anchovy, northern	<i>Engraulis mordax</i>	25	31.33	31.43	19.51	8.06
Barracuda, Pacific	<i>Sphyrna argentea</i>	2.78	2.41	1.43	0.81	0
Bass, kelp	<i>Paralabrax clathratus</i>	1.85	1.2	0.71	0	1.61
Blacksmith	<i>Chromis punctipinnis</i>	0	0	0.71	2.44	3.23
Bonito, Pacific	<i>Sarda lineolata</i>	2.78	2.41	0.71	1.63	1.61
Butterfish (Pacific pompano)	<i>Peprilus simillimus</i>	16.67	16.87	13.57	17.07	3.23
Croaker, White (kingfish)	<i>Genyonemus lineatus</i>	5.56	6	5.7	6.5	0
Fish, unspecified	--	0	1.2	7.1	1.6	1.6
Flatfish, unspecified	--	17.59	14.5	13.6	8.1	4.8
Flying fish, California	<i>Cheilopogon pinnatibarbatulus californicus</i>	0.93	0	1.4	5.7	3.2
Halfmoon	<i>Medialuna californiensis</i>	0	2.4	0.7	0	6.5
Halibut, California	<i>Paralichthys californicus</i>	7.41	4.8	2.1	10.6	1.6
Herring, Pacific	<i>Clupea pallasii</i>	1.85	0	2.1	1.6	0
Herring, red-eye round	<i>Etrumeus teres</i>	11.11	1.2	2.9	4.1	4.8
Jacksmelt	<i>Atherinopsis californiensis</i>	18.52	37.4	30	24.4	16

MARKET SQUID FISHERY MANAGEMENT PLAN
– Amendment 1: XXXX, 2025

Common name	Scientific name	2019	2020	2021	2022	2023
Mackerel, jack	<i>Trachurus symmetricus</i>	47.22	33.7	27.9	49.6	37.1
Mackerel, Pacific (chub)	<i>Scomber japonicus</i>	52.78	48.2	21.4	53.7	58.1
Midshipman, unspecified	<i>Porichthys spp.</i>	2.78	0	0	1.6	1.6
Midshipman, plainfin	<i>Porichthys notatus</i>	3.7	14.5	11.4	6.5	0
Midshipman, specklefin	<i>Porichthys myriaster</i>	0	0	2.1	1.6	1.6
Pacific sardine	<i>Sardinops sagax</i>	74.07	71.1	58.6	67.5	54.8
Rockfish, unspecified	<i>Sebastes spp.</i>	2.78	1.2	3.6	3.3	1.6
Rockfish, bocaccio	<i>Sebastes paucispinis</i>	0.93	3.6	2.1	1.6	0
Sablefish	<i>Anoplopoma fimbria</i>	0	1.2	0.7	4.9	0
Salmon, Chinook	<i>Oncorhynchus tshawytscha</i>	1.85	6	0.7	0	0
Sanddab, unspecified	<i>Citharichthys spp.</i>	6.48	1.2	3.6	3.3	0
Sanddab, longfin	<i>Citharichthys xanthostigma</i>	0.93	1.2	0	0	1.6
Sanddab, Pacific	<i>Citharichthys sordidus</i>	11.11	27.7	27.1	21.1	1.6
Sanddab, speckled	<i>Citharichthys stigmaeus</i>	4.63	3.6	4.3	4.9	1.6
Scorpionfish, California	<i>Scorpaena guttata</i>	9.26	9.6	2.9	16.3	17.7
Sculpin, staghorn	<i>Leptocottus armatus</i>	0	1.2	1.4	3.3	0
Smelt, night	<i>Spirinchus starksi</i>	0	3.6	2.1	0	0
Sole, English	<i>Pleuronectes vetulus</i>	4.63	6	7.9	8.9	0
Sole, sand	<i>Psettichthys melanostictus</i>	1.85	1.2	2.1	6.5	0
Sunfish, ocean	<i>Mola mola</i>	0	3.6	0.7	4.9	0
Topsmelt	<i>Atherinops affinis</i>	1.85	4.8	0.7	0.8	0
Turbot, unspecified	<i>Pleuronectidae</i>	1.85	0	2.1	1.6	0
Turbot, hornyhead	<i>Pleuronichthys verticalis</i>	3.7	9.6	8.6	8.9	1.6
Wrasse, rock	<i>Halichoeres semicinctus</i>	0	0	0	0.8	1.6
Elasmobranchs	--	--	--	--	--	--
Ray, bat	<i>Myliobatis californica</i>	3.7	0	2.9	10.6	9.7
Ray, Pacific electric	<i>Torpedo californica</i>	8.33	13.3	9.3	8.9	0
Shark, horn	<i>Heterodontus francisci</i>	6.48	0	2.1	2.4	0
Skate, big	<i>Raja binoculata</i>	2.78	6	0	3.3	0
Skate, California	<i>Raja inornata</i>	2.78	1.2	1.4	0.8	0
Skate, unspecified	<i>Rajidae</i>	0	1.2	2.1	0.8	1.6
Stingray	<i>Dasyatidae</i>	0.93	1.2	2.1	0	0
Invertebrates	--	--	--	--	--	--
Anemones, unspecified	<i>Anthozoa</i>	0	3.6	0.7	0.8	0
Crab, unspecified	<i>Cancer spp.</i>	6.48	12.1	7.9	7.3	3.2
Crab, claws	<i>Cancer spp.</i>	2.78	2.4	5	2.4	0
Crab, decorator	<i>Bivalvia</i>	0.93	2.4	0	0.8	0
Crab, Dungeness	<i>Metacarcinus magister</i>	5.56	9.6	17.1	7.3	0
Crab, red rock	<i>Cancer productus</i>	5.56	3.6	5.7	4.1	0
Crab, rock unspecified	<i>Cancer spp.</i>	0.93	2.4	1.4	2.4	0
Crab, shells	--	8.33	15.7	12.1	8.9	0

Common name	Scientific name	2019	2020	2021	2022	2023
Crab, swimming unspecified	--	12.04	7.2	2.1	0.8	0
Jellyfish, unspecified	<i>Hydrozoa</i>	35.19	49.4	37.9	26.8	9.7
Lobster, California spiny	<i>Panulirus interruptus</i>	1.85	6	0.7	1.6	1.6
Mussel, unspecified	<i>Mytilus spp.</i>	6.48	1.2	2.1	0.8	6.5
Octopus, unspecified	<i>Octopus spp.</i>	2.78	2.4	1.4	0.8	0
Prawn, spot	<i>Pandalus platyceros</i>	0.93	1.2	4.3	1.6	0
Pyrosome	<i>Pyrosoma atlanticum</i>	27.78	31.3	16.4	28.5	24.2
Salps	--	6.48	3.6	4.3	4.9	8.1
Sand dollar	<i>Dendraster excentricus</i>	0.93	1.2	1.4	0	0
Sea cucumber, unspecified	<i>Holothuroidea</i>	1.85	3.6	2.9	3.3	1.6
Shrimp, target	<i>Sicyonia penicillata</i>	3.7	7.2	2.1	4.1	6.5
Squid egg cases	--	31.48	45.8	30	35	1.61
Marine Plants and Algae	--	--	--	--	--	--
Algae, marine	<i>Phycophyta</i>	21.3	13.3	20	9.8	9.7
Eelgrass	<i>Zostera spp.</i>	3.7	2.4	2.9	5.7	1.6
Kelp, unspecified	<i>Laminariales</i>	60.19	73.5	35.7	62.6	56.5
Kelp, feather boa	<i>Egregia menziesii</i>	7.41	6	6.4	7.3	1.6
Kelp, giant	<i>Macrocystis pyrifera</i>	11.11	4.8	22.9	4.1	6.5
Surfgrass	<i>Phyllospadix spp.</i>	35.19	57.8	34.3	22	4.8

2.13. Social and Economic Characteristics of the Market Squid Fishery

Squid fishing supplements the income of many seine vessels that also participate in fisheries such as salmon, tuna, herring, and other CPS throughout California, Oregon, Washington, and Alaska. A substantial number of market squid vessels have home ports outside California, likely due to declines in other fisheries. Some light boats also participate in other fisheries that do not use attracting lights.

The number of businesses purchasing squid had remained constant since the early 1980s; however, since the 1994-1995 season, the majority (80% or more) of the squid purchased was bought by nine or fewer dealers. In 2023, at least 80% of the catch was purchased by six dealers. Currently, the California squid industry is centered on global markets that have placed an increased demand upon California market squid. Vessels targeting squid usually have a relationship with one market from which they receive orders for specific amounts of squid.

When demand or storage space is limited, fishing is limited regardless of squid availability (Pomeroy and FitzSimmons 2001). The price paid to vessels depends on the market demand and the availability of the resource. Historically, when volume was low, the price paid per ton was high, and the

price is driven down when volume is high. Since 2000 the median ex-vessel price of market squid increased from \$0.10 to \$0.50 per pound and remained at \$0.50 per pound from 2016 to 2019. In 2020, the median ex-vessel price increased to \$0.60 per pound with an average price of \$1,160.00 per ton and remained at a median price of \$0.60 per pound through the 2023-2024 fishing season (Figure 2-9).

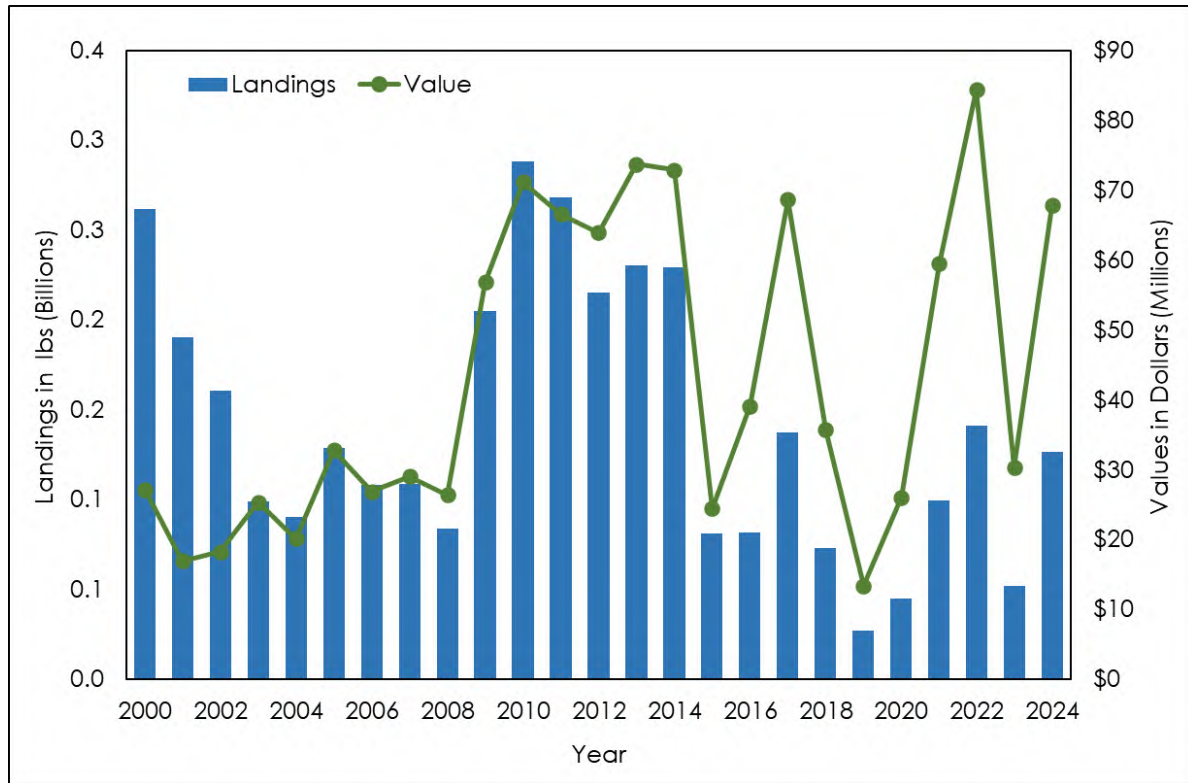


Figure 2-9. Dollars paid ex-vessel and landings in tons 2000 through 2024 (MLDS).

Although the volume of squid produced by the state's fleet is primarily dependent on the international market, the price paid for landings has influenced fishing effort, volume of squid caught, and size of squid caught. If squid processors reach capacity or supply exceeds demand, effort may decline due to lower economic incentive to fish. In recent years, international demand for market squid has remained constant with occasional size-based limits (Diane Pleschner-Steele, pers. comm.). Crew wages are typically 50% of ex-vessel revenue after operating costs. Light boats are typically paid 20% of the catch value after costs (Lutz and Pendleton 2000).

Most of the revenue in the squid fishery is generated by purse and drum seine fishermen (Table 2-7). Revenue from squid fishing using lampara nets declined 99% from 2.7 million dollars in 1981-1982 to zero dollars in recent years.

Table 2-7. Dollars paid ex-vessel by gear type for market squid fishery from 1981-1982 to 2023-2024 seasons. Note: dollars are not adjusted for inflation (MLDS).

Season	Brail	Purse seine	Drum seine	Lampara	Other	Total Value
1981-82	\$784,085	\$485,689	--	\$2,736,398	\$544,990	\$4,551,162
1982-83	\$220,933	\$232,256	--	\$2,256,622	\$17,260	\$2,727,070
1983-84	\$9,884	\$1,973	--	\$88,548	\$168,499	\$268,905
1984-85	\$313,559	\$26,941	--	\$37,497	\$192,358	\$570,355
1985-86	\$22,772	\$1,836,397	--	\$755,088	\$1,059,659	\$3,673,915
1986-87	\$46,771	\$2,208,225	--	\$819,332	\$1,109,205	\$4,183,532
1987-88	\$30,728	\$1,831,687	--	\$473,646	\$867,786	\$3,203,847
1988-89	\$25,106	\$2,621,290	\$10,924	\$956,279	\$1,262,613	\$4,876,212
1989-90	\$16,809	\$1,792,182	\$23,630	\$168,002	\$953,209	\$2,953,832
1990-91	\$12,810	\$2,576,712	--	\$109,038	\$1,199,802	\$3,898,362
1991-92	\$5,218	\$2,243,108	\$2,118	\$12,063	\$924,899	\$3,187,407
1992-93	\$5,808	\$2,080,155	--	\$22,029	\$208,549	\$2,316,541
1993-94	\$68,758	\$6,611,752	\$441,568	\$1,811	\$251,916	\$7,375,804
1994-95	\$280,832	\$8,181,704	\$5,857,551	\$9,658	\$338,642	\$14,668,386
1995-96	\$213,986	\$12,327,482	\$6,912,266	\$45,053	\$146,942	\$19,645,729
1996-97	\$109,399	\$16,506,397	\$6,901,917	\$28,358	\$211,777	\$23,757,850
1997-98	\$17,566	\$1,752,117	\$870,181	--	\$9,137	\$2,649,001
1998-99	\$97,272	\$2,483,404	\$1,138,391	--	\$725	\$3,719,794
1999-00	\$260,915	\$27,750,936	\$8,009,106	\$37,693	\$26,235	\$36,084,885
2000-01	\$437,870	\$18,146,102	\$5,502,793	\$17,042	\$54,960	\$24,158,768
2001-02	\$146,345	\$11,601,275	\$1,691,986	\$2,894	\$6,040	\$13,448,542
2002-03	\$33,392.00	\$8,369,379	\$3,651,143	\$119	\$3,233	\$12,057,268
2004-05	\$255,622	\$19,888,469	\$6,600,510	\$96,483	\$214,001	\$27,055,085
2005-06	\$0	\$28,783,257	\$11,310,135	\$25,178	\$29,120	\$42,335,964
2006-07	\$203,937	\$13,868,319	\$4,626,069	\$2,784	\$40,426	\$18,741,533
2007-08	\$529,044	\$21,708,163	\$7,180,469	\$15,047	\$226	\$29,432,950
2008-09	\$145,636	\$20,103,331	\$7,160,752	\$26	\$523	\$27,410,268
2009-10	\$1,509,856	\$34,752,417	\$11,896,157	\$0	\$19,905	\$48,178,334
2010-11	\$1,653,189	\$42,556,518	\$22,005,745	\$1,980	\$18,874	\$66,236,306
2011-12	\$3,307,709	\$44,777,948	\$19,210,014	\$19,066	\$2,918	\$67,317,655
2012-13	\$2,400,491	\$45,133,287	\$15,193,840	\$6,137	\$48,617	\$62,782,371
2013-14	\$2,282,399	\$50,960,802	\$20,478,753	\$0	\$15,351	\$73,737,304
2014-15	\$26,795	\$51,368,803	\$21,298,309	\$6,748	\$92,059	\$72,792,713
2015-16	\$8,332	\$15,224,186	\$9,252,200	\$0	\$1,646	\$24,486,365
2016-17	\$759,874	\$28,501,457	\$11,358,631	\$9,055	\$4,970	\$40,633,988
2017-18	\$994,642	\$52,797,856	\$19,559,007	\$348	\$102,915	\$73,454,767
2018-19	\$762,875	\$24,841,341	\$7,852,440	\$20,093	\$41,012	\$33,517,762
2019-20	\$80,863	\$11,902,036	\$3,206,836	\$0	\$12,821	\$15,202,556
2020-21	\$88,068	\$17,573,544	\$7,464,312	\$0	\$892	\$25,126,815
2021-22	\$1,340,376	\$52,913,859	\$20,855,574	\$0	\$8,189	\$75,177,998
2022-23	\$792,706	\$50,145,172	\$16,436,809	\$0	\$6,262	\$67,380,949
2023-24*	\$1,302,598	\$45,147,953	\$15,907,465	\$0	\$27,688	\$62,385,703

*Preliminary data.

2.14. Location of the Fishery

The market squid fishery is centered in the nearshore waters off California, though market squid may be available in commercial quantities from British Columbia to Baja, California. Market squid harvest is allowed statewide in all areas defined as ocean water in CCR Title 14 §27.00, except where prohibited or restricted, as specified, in state MPAs and round haul gear closure areas (FGC §8750-8757). California squid landings have occurred at various times from as far south as San Diego and as far north as Eureka, spanning the entire state (Figure 2-10).

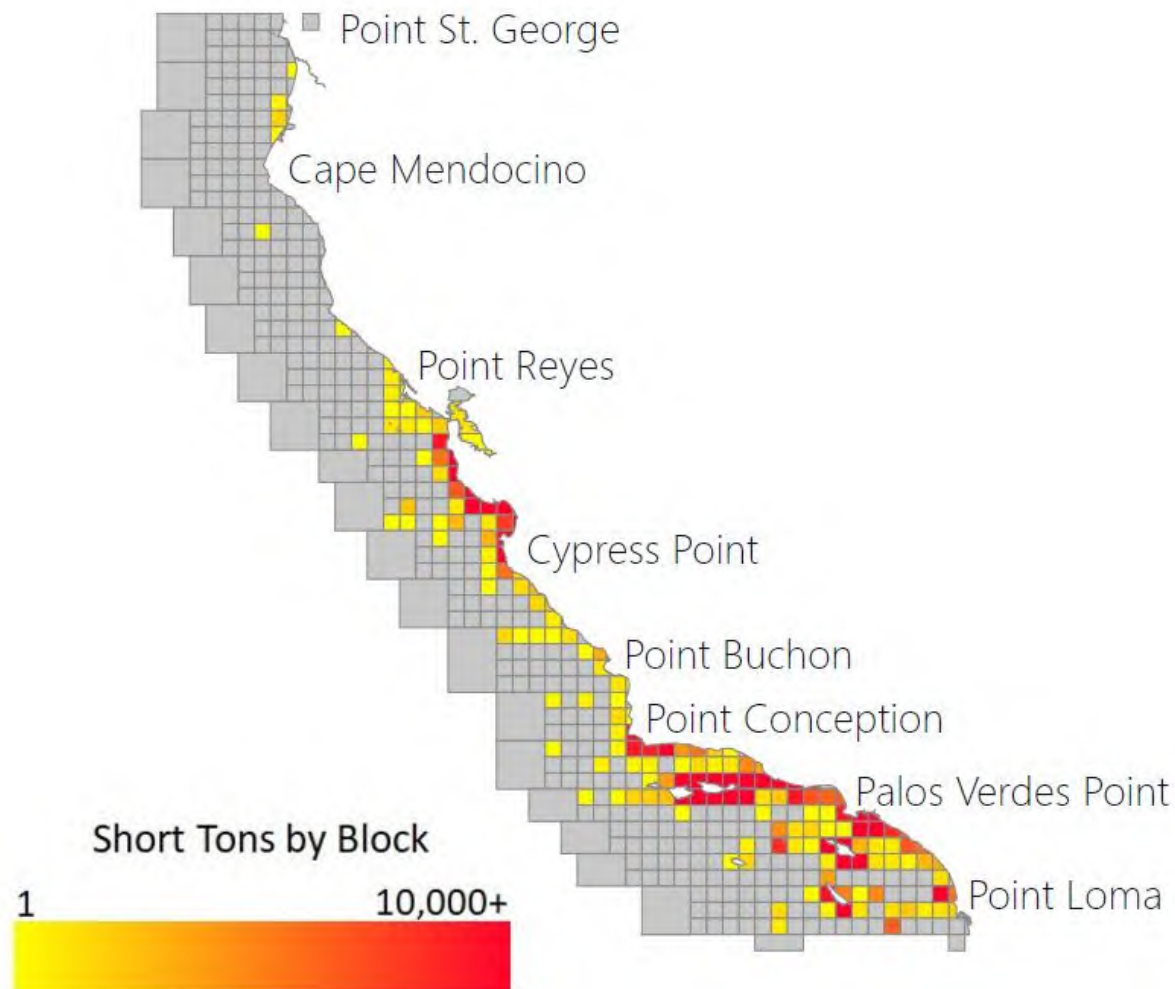


Figure 2-10. Geographic location of major fishing areas in California by CDFW blocks (10' x 10') from 1999 through 2023 (MLDS).

Seasonal shifts in resource availability and timing of peak spawning have produced two distinct fishing areas. Vessel participation is greatest during the late fall and early winter for southern California and during the summer for central California. Summertime fishing effort in central California is focused

around Monterey Bay and tends to occur between April and September, coinciding with the upwelling season (Zeidberg et al. 2006). The southern portion of the fishery encompasses most of the SCB including the northern and southern Channel Islands southward along the coast to La Jolla and is most active from October to February. During this time there is less stratification of the water column and more mixing due to winter storms and colder air temperatures (Zeidberg et al. 2006).

Prior to the 1980s the majority of market squid landings were primarily from Monterey Bay; however, since the 1985-1986 season, the majority of the catch has come from the SCB. Landings spiked dramatically in Monterey Bay area in 2010 and continued through 2014 (Figure 2-6, Table 2-8). Monterey, Ventura, and Los Angeles Counties are the principal counties where squid is offloaded and distributed (Figure 2-11). While some vessels fish near home ports year-round, in general, the fleets' mobility continues to grow. Vessels based out of Monterey will travel south and vessels from Ventura or Los Angeles will also travel north to fish.

Table 2-8. Percent of revenue received by port area complex from 1981-1982 through 2023- 2024 fishing seasons. Note: dollars were not adjusted for inflation (MLDS).

Season	Monterey Area	Santa Barbara/Ventura	Los Angeles	Other Areas
1981-1982	71.8	4.5	23.7	0
1982-1983	84.1	0.1	15.8	0
1983-1984	62.7	3.2	3.3	30.8
1984-1985	32.1	21.5	43.9	2.6
1985-1986	42.9	22.3	34.8	0
1986-1987	30.5	21.2	46	2.2
1987-1988	31.1	34.2	34.2	0.4
1988-1989	23.5	7.3	67.6	1.6
1989-1990	38.9	6.4	54.6	0.1
1990-1991	33.3	31.4	34.5	0.8
1991-1992	27.4	26	35.7	10.8
1992-1993	28.2	33	19.2	19.7
1993-1994	13.7	35.4	39.6	11.2
1994-1995	19.1	55.6	17.8	7.5
1995-1996	2.2	68.4	28.2	1.2
1996-1997	2.2	62.3	35.2	0.3
1997-1998	80.7	16.2	0.7	2.4
1998-1999	0	83.1	16.6	0.3
1999-2000	0.2	68.9	30.8	0
2000-2001	7.7	48.1	44.1	0.1
2001-2002	13.2	35.5	50.7	0.7
2002-2003	54.1	33.7	9.7	2.4

Season	Monterey Area	Santa Barbara/Ventura	Los Angeles	Other Areas
2003-2004	27.3	40.6	25.5	6.6
2004-2005	10.5	74.9	12.5	2.1
2005-2006	2.3	16.3	81.4	0
2006-2007	1.4	65.8	32.8	0.1
2007-2008	0	53.9	46	0.1
2008-2009	1.8	67.7	30.3	0.2
2009-2010	0.7	62	36.9	0.4
2010-2011	16.1	42.6	40.7	0.6
2011-2012	11.3	44.9	43.2	0.6
2012-2013	9.3	29.5	51.7	9.5
2013-2014	13.3	43	34.8	8.9
2014-2015	40.9	30	14.7	14.4
2015-2016	37.2	41.5	2.6	18.7
2016-2017	17.6	42.6	25.3	14.5
2017-2018	10	61.8	23.8	4.4
2018-2019	40.1	37	18.1	4.8
2019-2020	16.1	38.6	40.6	4.7
2020-2021	66.6	6.7	12.3	14.4
2021-2022	31.8	46	17.1	5
2022-2023	5.5	68.6	25.8	0.1
2023-2024*	1.3	44.3	53.2	1.2

*Preliminary data.

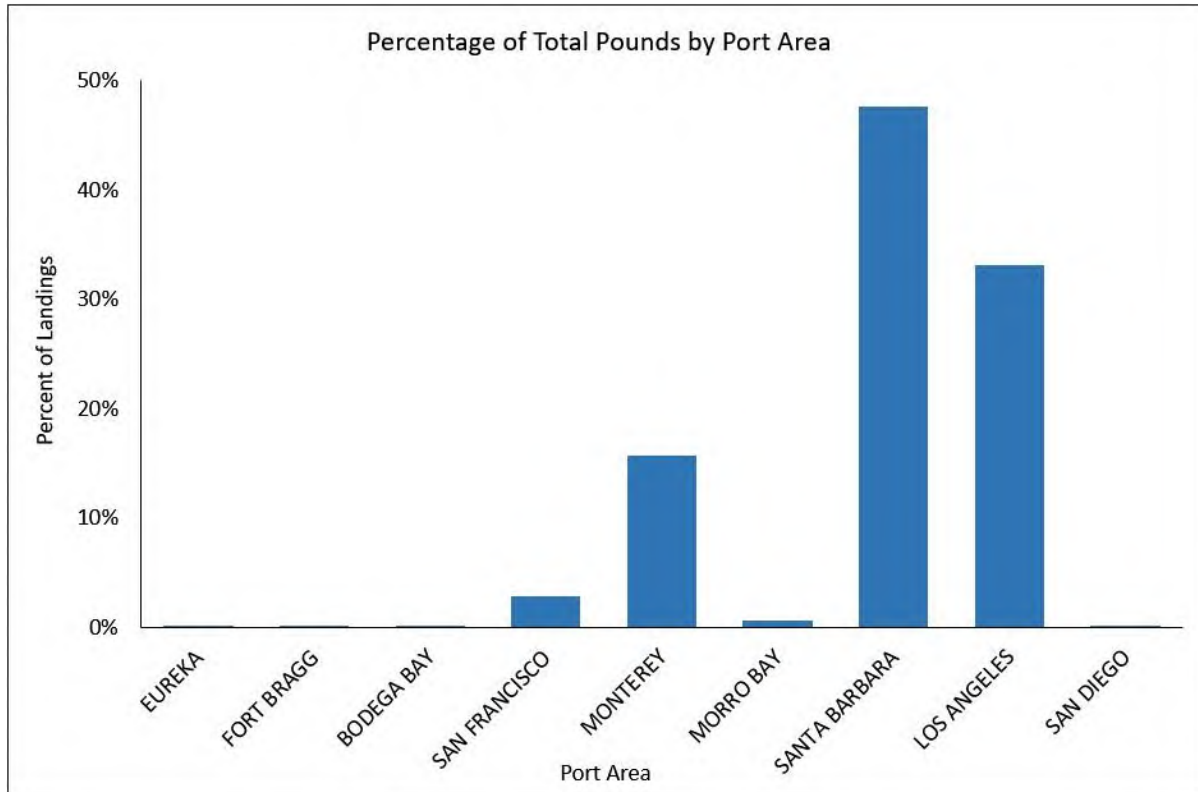


Figure 2-11. Percentage of market squid total landings (by weight) by port complex from 1980 to 2024 (MLDS).

2.15. History of Conservation and Management Measures

2.15.1. State Management

The regulatory history of the commercial market squid fishery by the State of California began with a ban on squid attracting lights in 1959 (Table 2-9). The addition of former FGC §8397 in 1957 prohibited the use of squid attracting lights in the Monterey Bay fishery.

Table 2-9 Summary of market squid regulations from 1959 to the present.

Date	Bill # (Author) / Regulatory Section	Management Action
1959	§8397	It is unlawful to use any artificial light to lure or attract squid in Districts 16 and 17. This section applies to all artificial lights except those lights necessary for the usual operation of a vessel not used to lure or attract, or intended to lure or attract, squid.
1983	AB 513 (Farr)	Authorizes the Commission to adopt regulations specifying the days of the week and times of the day when squid may be taken north of Point Conception.

Date	Bill # (Author) / Regulatory Section	Management Action
1984	CCR Title 14 §149	The Commission adds CCR Title 14 §149, to prohibit any vessel, using or possessing a roundhaul net in Districts 16 and any Monday through Thursday, 17, from taking market squid between noon Friday and midnight Sunday and between noon and midnight on
1987	AB 123 (Farr)	Allows the use of lights to attract squid in District 17.
1988	AB 4055 (Farr)	Allows the use of lights to attract squid in District 16.
1989	SB 1080 (Mello)	Allows the use of all roundhaul nets, including purse seine and half-purse seine nets, to take squid in all portions (including the southernmost portion) of 16, subject to the same area and season restrictions previously in effect for lampara nets.
1993	AB 14 (Hauser)	Restricts the use of attracting lights in District 10.
1993	SB 1030 (Thompson)	A landing fee of \$0.0019/lb. is imposed.
1997	SB 364 (Sher)	Authorizes the take of market squid north of Pt. Conception between noon on Sunday and noon on Friday. Requires a permit for the take of squid with a dip, purse seine, or lampara net for commercial purposes. Requires a permit to attract squid by light from a vessel. Establishes a fee for a commercial squid Market Squid Light Boat Permit. Allows for transfer of vessel or light boat permits under certain conditions. A three-year moratorium on commercial squid vessel permits is established; the possession of a permit from the previous year is required in order to renew.
1998	AB 1928 (Morrow)	No permit is necessary, nor is a landing fee imposed, for the take of live bait. Drum seines and other roundhaul nets excepted from prohibition of rings along lead line and pursing of net bottoms.
1998	AB 1241 (Keeley)	Marine Life Management Act passes.
2000	CCR Title 14 §149	Amendment – Prohibits commercial take of market squid between noon on Friday and noon on Sunday from Pt. Conception south to the U.S.-Mexico border. Requires commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities.
2000	CCR Title 14 §149	Amendment – Vessels fishing or lighting for squid are restricted to using no more than 30,000 watts of light. Each vessel fishing or lighting for squid must shield the entire filament of each light, directing the light downward, or the vessel must keep the illumination completely submerged underwater.
2000	SB 1544 (Sher)	Establishes a \$400 fee for a commercial Market Squid Vessel Permit. Extends the sunset date for SB364 to 1 January 2004. Extends existing duties imposed on the Department and the Commission and makes an appropriation.

Date	Bill # (Author) / Regulatory Section	Management Action
2001	SB 209 (Sher)	Requires the Commission to adopt an MSFMP by 31 Dec 2002, after consideration and public hearings. Requires the Commission to establish fees for commercial Market Squid Vessel Permits and commercial Market Squid Light Boat Permits annually commencing April 1, 2003. Prohibits each person who is issued a commercial Market Squid Light Boat Permit from selling, trading or transferring the permit to another person. Provides that specified provisions will become inoperative upon the adoption by the Commission of an MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.
2001	CCR Title 14 §149	Proposed regulatory changes establish catch limits in order to protect the squid resource and manage the fishery sustainably; a harvest guideline of 125,000 tons was selected.
2001	Title 14, CCR §159	Market Squid is included under Commercial Fishing for CPS.
2003	Title 14, CCR §1.39	Market Squid is included in CPS under General Provisions and Definitions.
2004	Title 14, CCR §149	Establishes a seasonal (April 1 to March 31 of the following year) catch limit of 118,000 tons (107,047 mt) for commercial catch of Market Squid. Continues closures between 1200 hours (noon) on Friday and 1200 hours (noon) on Sunday of each week from the U.S.-Mexico border to the California-Oregon border. When the commercial fishery is closed, squid may be taken for commercial purposes only incidentally to the take of other target species or for live bait. Prohibits take of Market Squid for commercial purposes using attracting lights in all waters of the Greater Farallones National Marine Sanctuary. This regulation also applies to vessels pursuing squid for live bait purposes. Requires any operator of a commercial market squid vessel or permit holder of any commercial market squid permit to submit an accurate record of his/her squid fishing, lighting, or brailing activities on market squid logbooks provided by the Department, as appropriate to the type of fishing activity. Prohibits attracting squid by light except as authorized by restricted access market squid fishery permits. This regulation does not apply to seine skiffs of a permitted vessel or to vessels pursuing squid for live bait purposes only. Allows incidental take of market squid when fishing for other target species. This volume shall not exceed 2 tons per trip. Prohibits the take of live bait for purposes other than use as live bait or sale as live bait.
2005	Title 14, CCR §149.1	Establishes a market squid fishery RA program.
2005	§149.3, Title 14, CCR	Allows the commission to issue three-Non-Transferable Market Squid Vessel Permits for purposes of developing a squid fishery in areas previously not utilized for squid production.

Date	Bill # (Author) / Regulatory Section	Management Action
2014	§149, Title 14, CCR	Allows incidental take of market squid when fishing for other target species. This volume shall not exceed 2 tons per trip or 10% of the total volume by weight of all fish landed of possessed.
2022	§149.3, Title 14, CCR	Repealed.
2025	Title 14, CCR §149	Amended the original MSFMP to include language requiring a rib line, rope purse line, and extending the weekend closure. Amended market squid regulation to change closure notification from U.S. Coast Guard Channel 16 to wildlife.ca.gov/marine . Reiterated the regulation that weekend closures include any type of lighting for squid.

Processors believed that squid caught with the aid of attracting lights were of poorer quality and smaller in size than those caught without lights. The fishermen also felt that the lights disrupted spawning. Further, banning attracting lights would prevent canneries from harvesting squid directly from their docks. The prohibition on attracting lights was lifted in 1987 for most of Monterey Bay (District 17); in 1988, attracting lights were once again allowed in the Pacific Grove area in Monterey Bay (District 16).

In 1983, the Commission adopted regulations that limited the days of the week and times of day that fishermen could engage in the take of market squid. CCR Title 14, §149 prohibited any vessel, using or possessing a roundhaul net in Monterey, from taking market squid between noon on Friday and midnight on Sunday, and between noon and midnight on any day Monday through Thursday. In 1989, Senate Bill (SB) 1080 (Mello) allowed fishermen to utilize all types of roundhaul nets, including purse and half-purse seine nets, in the take of market squid in the Pacific Grove area (District 16). In 1990, the Commission amended its regulations (CCR Title 14 §149) to allow for the take of squid by roundhaul gear before midnight Monday through Thursday north of a line running 252° magnetic from the Moss Landing Harbor entrance.

In 1993, the market squid landing fee was increased to \$0.0019 per pound (SB 1030, Thompson). The same year, Assembly Bill (AB) 14 (Hauser) restricted vessels from the use of squid attracting lights in District 10 (ocean waters of San Mateo, San Francisco, Marin and Sonoma Counties).

Before April 1998, the market squid fishery was largely an unregulated, open access fishery. Because of increasing market interest and rising squid landings, SB 364 (Sher), was passed in 1997. This legislation established a \$2,500 permit for market squid vessels and light boats and a three-year

moratorium on entry into the fishery; called for a three-year study of the fishery; and provided for the creation of an SFAC and an SRSC to advise the Department on research and interim measures. Senate Bill 364 also required that the Department present a report on the fishery to the Legislature, with recommendations for a conservation and management plan by April 2001.

In 1998, the MLMA was enacted. In 1999, the Legislature appropriated \$5.2 million to implement the MLMA. The MLMA removed from the Legislature the burden of micro-managing fisheries by transferring that oversight role to the Commission and directing several actions, including:

- development of a master plan for implementing the MLMA;
- development of management plans for California state fisheries; and
- development of a plan for dealing with emerging fisheries as they become operational in California.

In 2000, SB 1544 (Sher) was enacted, reducing the market squid permit fee to \$400 from \$2,500 until April 2003 and extending the sunset date for FGC Article 9.7 to 1 January 2004. When Governor Davis signed SB 1544, he did so to ensure uninterrupted protection and regulations for the squid fishery, but requested that the Legislature, squid fishermen and their representatives as well as other stakeholders “review the appropriateness of the squid permit fee.”

In 2000, the Commission adopted interim measures for the market squid fishery under CCR Title 14 §149. The regulations prohibited the commercial take of market squid between noon on Friday and noon on Sunday from Pt. Conception south to the U.S.- Mexico border and required commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities. In response to potential negative effects on nesting seabirds of vessels lighting for squid on several of the Channel Islands, the regulations restricted attracting lights to a maximum of 30,000 watts and required that lights be shielded.

In 2001, SB 209 (Sher) was enacted, authorizing the Commission to manage the squid resource and to adopt an MSFMP. Other features of SB 209 included providing that specified provisions will become inoperative upon the adoption by the Commission of an MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.

In 2004, the Commission adopted the original MSFMP. The MSFMP was reviewed through an extensive Commission process and was developed under the provisions set forth by California's MLMA. The MSFMP established a management program for California's market squid resource and procedures by which the State manages the market squid fishery. The goals

of the MSFMP A-1 are to manage the market squid resource to ensure long-term conservation and sustainability, reduce the potential for overfishing, and institute a framework for management that is responsive to environmental and socioeconomic changes. The tools implemented to accomplish the original MSFMP goals were:

Fishery control rules, including:

- An SCL to prevent the fishery from over-expanding;
- Weekend closures, which provide for periods of uninterrupted spawning;
- Gear regulations regarding light shields and wattage used to attract squid and;
- Monitoring programs designed to evaluate the impact of the fishery.
- A restricted access program, including provisions for initial entry into the fleet, types of permits, permit fees, and permit transferability that produced a moderately productive and specialized fleet.
- A seabird protection measure restricting the use of attracting lights for commercial purposes in any waters of the Greater Farallones National Marine Sanctuary.

Chapter 3. Management Measures for a Sustainable Market Squid Fishery

3.1. Project Objectives

The MLMA sets sustainability as an overall goal for the fishery management system (FGC §7056). Within the definition of sustainability, the MLMA includes not only the maintenance of the fishery populations, but also the fullest possible range of present and long-term benefits (including ecological benefits), and biological diversity (FGC §99.5). The MLMA calls for achieving its primary goal of sustainability by meeting several objectives:

- preventing overfishing;
- rebuilding depressed stocks;
- ensuring conservation;
- promoting habitat protection and restoration.

FMPs must identify measures that will be used for the conservation and management of the fishery (FGC §7082). Among other measures, the MLMA identifies area and time closures, size limits, gear restrictions, and restricted access. The Department meets the requirements, goals, and objectives of the MSFMP A-1 using management based on four components: 1) fishery control rules, 2) a restricted access program, 3) ecological considerations, and 4) administrative items. The MSFMP A-1 protects the market squid resource and the marine life that depends on squid by minimizing the risk of overfishing, adverse social and economic impacts on the fishing communities whenever possible, and ecological impacts that result from the commercial squid fishery; together the MSFMP A-1 forms an integral approach to meeting MLMA guidelines.

The MSFMP A-1 establishes a fisheries management program for market squid and procedures by which the Commission will manage the market squid resource and various fishery components. In addition, the MSFMP A-1 defines the scope of management authority for the Commission when acting under the MSFMP A-1. Management measures implementing the MSFMP A-1, which directly control fishing activities, must be consistent with the goals and objectives of the MLMA and other applicable laws. Also, management measures must be consistent with federal management requirements in the CPS FMP. Management actions are to be considered repeatedly within the streamlined process that provides for more timely Commission action under certain specific conditions. Procedures in this FMP do not affect the authority of the Director of the Department to take emergency regulatory action under FGC §7710.

3.1.1. Fishery Control Rules

Fishery control rules provide a protocol for managing sustainable levels of market squid fishing that is enforced through the adoption of specific regulatory tools such as an SCL, gear restrictions, weekend closures, and sustainable levels of egg escapement. The MLMA concept of adaptive management is particularly relevant to the fishery because information regarding the biology of market squid is limited, and no reliable estimate of market squid abundance is available. Control rules established in the MSFMP A-1 include:

- **Seasonal Statewide Catch Limitation** – Maintain an SCL based on recent average catch and the assumption that squid biomass is above average spawning biomass (currently set at 118,000 tons).
- **Weekend Closures** – Full fishery closures from 0700 Friday to noon Sunday from the U.S.-Mexico border to the California-Oregon border with an extended closure from noon to midnight Sunday in the Monterey Bay area (a line due west from Point Lobos (36° 31.461' North Latitude) to a line due west from Pigeon Point (37 ° 11.000' North Latitude)).
- **Monitoring Program** - Continue existing squid monitoring programs (biological sampling and fishery logbooks). Support the development of an electronic logbook (e-log) for the California market squid commercial fishery.
- **Live Bait Fishery and Incidental Catch of Market Squid** – An exemption from the squid fishery permit requirement when fishing for live bait or incidental take two tons or less.
- **Gear Restrictions** –
 - Limit the total squid light wattage to 30,000 watts.
 - Require that squid lights reduce light scatter by shielding the entire light emitting portion of each light used to attract squid and orient the illumination directly downward so that the lower edge of the shield is parallel to the deck of the vessel.
 - Require that any purse seine used to take squid or onboard a vessel possessing squid be fitted with and pursed with a soft (non-metallic) rib line.

3.1.2. Restricted Access Program

The MSFMP A-1 restricts access to the fishery based upon the MLMA and the Commission's restricted access policy, along with the established capacity goal (the optimum number of vessels in the fleet that will promote resource sustainability and economic viability of the fishery), and transferability conditions for the commercial market squid fishery.

3.1.3. Ecological Considerations

The market squid fishery is part of a larger ecosystem that includes the effects of ecological interactions of the project on non-target species and habitat. In addition, the market squid resource is a significant forage component in the diets of seabirds, marine mammals, and fish. Harvest replenishment and general habitat closure areas provide for specific areas where no squid fishing can occur. Harvest replenishment areas can provide areas of uninterrupted spawning. General habitat closures are intended to prevent squid fishery interactions in areas that have not been traditionally utilized for commercial squid fishing and where there is the potential for interactions with non-target species such as salmon, seabirds, and marine mammals. Gear restrictions, including the use of a rib line, are implemented in order to reduce impact to squid egg beds. Seabird closure areas reduce the potential for interactions between the squid fishery and seabirds that are sensitive to disturbance from lights and noise.

3.1.4. Administrative Items

This category contains items that are administrative in nature to the MSFMP A-1, namely the creation of a squid advisory committee.

3.2. Fishery Control Rules

3.2.1. Definition of Maximum Sustainable Yield and Optimum Yield

Fishery control rules are the primary mechanism for achieving sustainable use, preventing overfishing, preserving habitat, rebuilding depressed stocks, and recognizing the importance of non-consumptive uses. In addition, control rules must be based on objective, measurable criteria such as population size, productivity, density, or other inputs. Formulas are often used to calculate an allowable catch (fishing mortality); however, control rules do not have to be cast in terms of fishing mortality rates or biomass levels. In general, fishery control rules help identify key management measures appropriate to the fishery.

The MLMA defines MSY as “the highest average yield over time that does not result in a continuing reduction in stock abundance, taking into account fluctuations in abundance and environmental variability” (FGC §96.5). The MSY model determines catch limits, which most often are expressed as a fixed fishing rate such that a constant fraction of the stock may be harvested each year. It is specific for each species or stock of fish and is calculated from knowledge of abundance, life history, and population dynamics. Environmental factors are also considered since they affect growth, reproduction, and mortality rates. In many cases, providing a range of

estimates for MSY may be reasonable since there are different assumptions in the model. In addition, scientific information may be inadequate to directly calculate MSY for a particular species, and a proxy or substitute is used. For example, recent average catch may be used as a proxy for MSY if a period is chosen when there is no evidence of long-term declining abundance.

The MLMA additionally defines Optimum Yield (OY) to give specific direction for resource managers:

“Optimum yield, with regard to a marine fishery, means the amount of fish taken in a fishery that does all of the following: (a) provides the greatest benefit to the people of California, particularly with respect to food production and recreational opportunities, and takes into account the protection of marine ecosystems; (b) is the maximum sustainable yield of the fishery, reduced by relevant economic, social, or ecological factors; (c) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing maximum sustainable yield in the fishery” (FGC §97).

It is not uncommon that the status of knowledge for a given stock is limited to the catch history and incomplete life history information. This fact is acknowledged by the Legislature in both the MLMA [see FGC §90.1, 7056(g), 7059, 7060, 7072(b), 7073(b) 7081] and in the squid statutes [see FGC §8420(b), 8426(c)]. A precautionary approach to calculating OY in data-moderate or data-poor situations is to multiply MSY, or its proxy, by a fraction. A tenet of this principle is that less aggressive (more restrictive) harvest policies are adopted as uncertainty increases concerning the status of stocks and the stock’s response to fishing pressure (Restrepo et al. 1998). And, as mentioned above, an alternative approach is to select a proxy when information needed to calculate MSY is lacking.

3.2.2. Proxy for MSY and Precautionary OY

MSY is not always calculatable for data limited fisheries or for species with a natural mortality of one year or less. Restrepo et al. (1998) provided an alternative approach for federal fisheries management, and the State used a variant of the Restrepo approach in the regulations for the market squid fishery.

A proxy for MSY is calculated when MSY-related parameters cannot be estimated from available data or when estimated values are deemed unreliable for various reasons (e.g., extremely low precision, insufficient contrast in the data, or inadequate models). The proxy for MSY in data-poor and data-moderate situations is based on the historical average catch, selecting a period when abundance is not declining. A proxy for OY is then determined by reducing the proxy MSY by a percentage that can vary

depending on the amount of information available. As uncertainty decreases about the status of stocks and their response to fishing pressure, less precautionary management can be adopted. This approach to risk management reduces the chance of inadvertent overfishing when little is known about the status of a stock.

No definitions or standards for measuring the level of data richness exists for a fishery other than the general guidance provided in Restrepo et al. (1998), although it is important to remember the guidelines were established for fish that are considered long-lived in comparison with the market squid, which only live less than one year:

- Data-rich cases: Reliable estimates of MSY-related quantities and current stock size are available. Stock assessments may be sophisticated, and provide a reasonably complete accounting of uncertainty;
- Data-moderate cases: Reliable estimates of MSY-related quantities are either unavailable or of limited use due to peculiar life history, poor data contrast, or high recruitment variability, but reliable estimates of current stock size and all critical life history (e.g., growth) and fishery (e.g., selectivity) parameters are available. Stock assessments may range from simple to sophisticated and uncertainty can be reasonably characterized and quantified;
- Data-poor cases: Reliable estimates of MSY-related quantities are unavailable, as are reliable estimates of either current stock size or certain critical life history or fishery parameters. Stock assessments are minimal, and measurements of uncertainty may be qualitative rather than quantitative.

3.2.3. Seasonal Catch Limitation

3.2.3.1. A Proxy for MSY Based on Historical Landings

Guidance taken from NOAA Fisheries (Restrepo et al. 1998) propose that for species such as market squid, a proxy may be used for MSY, and to use recent average catch from a period when no qualitative or quantitative evidence of declining abundance was observed.

El Niño events are a recurring phenomenon of the CCE and thus, are a factor in landings when considering MSY. Historic market squid data indicate that low landing periods correspond with El Niño events when availability of squid to the fishery is greatly reduced. In addition, market conditions are volatile and influenced by the international demand and availability of supply from other fisheries. Demand for California market squid from the Republic of China during the period between the 1993-1994 and 1997-1998 El Niño events

increased significantly, a situation that kindled rapid development of fishing and expansion of processing for export. The expansion ended with the onset of the 1997-1998 El Niño event during which market squid availability dropped to very low levels and landings declined.

The first fishing season (1999-2000) following the 1997-1998 El Niño event resulted in the highest squid landings on record (Table 3-1). Nearly all of the landings were from the southern California fishery (99.7%); landings reported from the northern fishery were minimal (0.3%). The disparity between southern and northern landings was not predicted given the understanding of the market squid fishery at the time, nor by utilizing temperature inclusive models. Average landings from 1991 to 2003, used as the proxy for market squid MSY, are presented in Table 3-1.

Table 3-1. Market Squid landings by season, 1991-1992 through 2002-2003 and average landings based on 10, 5, or 3 years using different seasons. Averages are rounded to the nearest thousand.

Season	Total landings (tons)	10-yr Avg. ('93-'94 to '02-'03)	5-yr Avg. ('98-'99 to '02-'03)	3-yr Avg. ('00-'01 to '02-'03)	10-yr Avg. ('92-'93 to '01-'02)	5-yr Avg. ('97-'98 to '01-'02)	3-yr Avg. ('99-'00 to '01-'02)
1991-1992	38,666	--	--	--	--	--	--
1992-1993	18,793	--	--	--	18,793	--	--
1993-1994	54,452	54,452	--	--	54,452	--	--
1994-1995	63,592	63,592	--	--	63,592	--	--
1995-1996	93,833	93,833	--	--	93,833	--	--
1996-1997	124,309	124,309	--	--	124,309	--	--
1997-1998	10,898	10,898	--	--	10,898	10,898	--
1998-1999	11,699	11,699	11,699	--	11,699	11,699	--
1999-2000	126,772	126,772	126,772	--	126,772	126,772	126,772
2000-2001	123,411	123,411	123,411	123,411	123,411	123,411	123,411
2001-2002	102,715	102,715	102,715	102,715	102,715	102,715	102,715
2002-2003	46,994	46,994	46,994	46,994	--	--	--
Average (rounded)	68,000	76,000	82,000	91,000	73,000	75,000	118,000

3.2.3.2. Establishment of a Seasonal Catch Limitation

The Commission established a statewide SCL using a 3-year average catch from the 1999-2000 to 2001-2002 fishing seasons (Table 3-1). The seasonal catch limitation assumed that the stock was above the average spawning biomass (B_{MSY}) and used a precautionary multiplier of 1.0. The SCL is currently set at 118,000 tons.

The ability of the market squid fishery to support landings of greater than 100,000 tons in the 1999-2000 season with repeat landings of the same magnitude in the following two seasons suggests that the stock is robust enough to withstand the level of landings. This is likely due to the semiannual lifespan and the presence of several (minimum seven) cohorts throughout the year. A multiplier of 1.0 was chosen to be most appropriate for market squid as opposed to more precautionary OY multipliers since traditional assessment methods are normally used for much longer-lived fish species.

Setting an SCL serves to curtail growth of the fishery, should market demand allow for such expansion. It is prudent not to allow landings to expand beyond present levels without better methods to assess the status of the resource.

3.2.3.3. The Use of Egg Escapement as a Proxy for MSY

As was mentioned above, no biomass estimate exists for market squid, nor is it possible to define an overfished condition for the species. It is important to recognize that setting an actual MSY for market squid is impractical for the squid fishery because the species is short-lived, and landings are strongly influenced by market demand rather than effort. Overfishing is defined as harvests of squid are occurring at times when either the egg escapement threshold is not being met, or that catches are exceeding specified allowable levels that may not be sustainable.

Consequently, the egg escapement method will also be used as a proxy for MSY/OY. The egg escapement method of assessing fishery impacts to the squid resource is identified in Amendment 10 of the Federal CPS FMP (PFMC 2002) and brings the state in compliance with federal regulations. The egg escapement method of regulating the fishery relies on the Department to monitor the squid fishery at an appropriate level to collect adequate biological information. The egg escapement model, as a proxy for MSY, was intended to be a temporary measure until an acceptable biomass estimate can be determined for market squid. Since an accurate biomass estimate cannot be determined for market squid, agencies will continue to utilize and improve the egg escapement method.

3.2.4. Weekend Closure for Commercial Market Squid Fishery

The current weekend closure begins noon Friday and continues through noon Sunday from the U.S.-Mexico border to the California-Oregon border. The weekend closure allows for two days of uninterrupted spawning in areas where squid are harvested. The closure provides protection to the resource

by allowing spawning to occur and egg cases to be deposited without disturbance from the fishery. The use of attracting lights is not allowed during the weekend closures for commercial harvest per CCR Title 14 § 149, with an exception for vessels actively engaged in the commercial take of squid for sale as live bait. Unlike a seasonal quota or closure, a weekend closure spreads the spawning escapement throughout the year, rather than concentrating spawning escapement during one particular period. Furthermore, without the ability to establish a biomass estimate for squid and the fact that landings scale with effort, temporal closures that allow uninterrupted spawning (i.e., the weekend closure) as opposed to catch controls (i.e., SCL or daily catch limits) are considered more effective when squid abundance is low.

Prohibiting fishing activity on weekends may also help alleviate conflict with other interest groups (e.g., divers, recreational fishermen, commercial passenger fishing vessels), allows for other activities operating in the same area, and reduces potential disturbance to seabirds.

In 2021, a petition was submitted to the Commission requesting a weekend closure extension and incorporation of half-day closures on weekdays in the Monterey Bay area. The rationale for the proposed change was the concern that increased fishing pressure in the Monterey Bay area was not allowing enough time for squid to spawn. The petition was referred to the SFAC process.

Extension of the weekend closure was discussed during the 2023-2024 SFAC process. After review of Empirical Dynamic Modeling (EDM) results, monitoring data, and feedback from the SFAC, an extension to the front end of the weekend closure Statewide and an extended Sunday closure in the Monterey Bay area was recommended. The extended closure provides an added buffer for sustainability, is unlikely to negatively impact overall yields, and is enforceable.

The exemption for lighting on the weekend when taking market squid as live bait was amended to make the provision clearer and more enforceable. The change is intended to ensure vessels do not use lights for other purposes, while claiming to be engaged in the take of live bait. The amendment clarifies that lighting on the weekend is only allowed when actively taking market squid for live bait. Revisions to the regulation specify that live market squid must be kept in a condition to be sold as live bait and returned to the water if it is not sold as live bait. Also, vessels engaged in the take of market

squid for live bait must notify the Department in advance, to indicate their intent to take live bait during a weekend closure.

3.2.5. Monitoring Programs

Commercial fisheries landings data, collected since 1969, are now submitted by fish businesses through electronic fish tickets (E-tix). A separate market squid fishery logbook program includes effort and location information submitted on paper logs by vessel operators. A dockside sampling time series began in 1998. Department staff monitor offloads at the docks and subsample squid for processing in a laboratory. The dockside sampling program supports bycatch monitoring and provides inputs for the egg escapement modelling as a measure of relative spawning potential over time.

3.2.6. Live Bait Fishery and Incidental Catch of Market Squid

The Commission decided not to require a Market Squid Vessel Permit when fishing for live bait or when landing or taking market squid less than two tons incidentally in any calendar day. Market squid are an important source of live bait for the California recreational fishing industry. A relatively small volume is taken by the live bait industry using brail, lampara, or drum seine gear. This fishery is a high value use of squid, supplying bait to recreational fisheries along the West Coast, primarily in southern California. Live bait catch, largely dependent on local availability, is sold by vessels either at sea or at live bait dealerships in several harbors statewide. Since the sale of live bait in California was not previously documented in a manner similar to that used for the commercial landings of squid, accurate estimates of tonnage and value are not available. Some operators record scooping live squid for sale as bait in market squid logbooks. Since 2019, reporting requirements to submit landing receipts has provided data on live bait catch.

Because squid frequently school with CPS finfish, mixed landings of market squid and CPS finfish are common. With an SCL in place, once the catch limit is reached, an allowance for incidental catch of market squid from other commercial fisheries is needed and would prevent squid from being discarded.

3.2.7. Gear Restrictions

The Commission chose to maintain lighting restrictions, which state that each vessel fishing for squid or lighting for squid will utilize a total of no more than 30,000 watts of light to attract squid at any time. As part of those restrictions, each vessel fishing for squid or lighting for squid will reduce the light scatter of its fishing operations by shielding the entire filament or device capable of

emitting light for each light used to attract squid and orient the illumination directly downward or provide for the illumination to be completely below the surface of the water.

In addition, the Commission chose to modify existing shielding regulations to require that the lower edges of the shield be parallel to the deck of the vessel to provide the maximum shielding possible to reduce impacts to seabird or coastal communities. Since light shields are currently required, there would not be any significant change in net economic benefits and fishery community economic activities while reducing impacts to seabirds and coastal communities.

Department data show nets are at times interacting with bottom habitats, egg beds, benthic species, and prohibited species. As a result, the Department determined it prudent to consider additional measures as guided by the MLMA to minimize adverse effects on habitat caused by fishing. A rib line creates a “ribbing” or additional webbing between the leadline and the purse line. When contacting the bottom, this causes the net to flutter or bounce as opposed to dragging. The rib line is intended to reduce the likelihood of pursing benthic bycatch, including squid eggs, and to reduce the impact on the sandy bottom habitat, while also preserving the integrity of and preventing damage to the net. Observations of squid eggs in the offloads were roughly half as likely when vessels had a rib line.

3.2.8. Restricted Access (Limited Entry) Program

The goal of the limited entry program was to produce a moderately productive and specialized fleet. Limited entry programs are designed to match fishing effort with the sustainability of the resource and to address economic issues associated with excess harvest capacity in open access fisheries. Specifically, the Commission’s purposes for restricting access or entry to a fishery are described as: (1) promote sustainable fisheries; (2) provide for an orderly fishery; (3) promote conservation among fishery participants; and (4) maintain the long-term economic viability of fisheries. Fisheries characterized by excess harvesting capacity are described as overcapitalized in terms of the number of vessels and the amount of gear and equipment devoted to harvesting. If the fishery becomes overcapitalized, harvesting costs increase while catches remain the same. This situation represents an economically inefficient use of society’s productive resources and causes several problems for managers and the fishing industry when abundance and demand decline, and catches are reduced. At the time of its conception, the limited entry program for the market squid fishery was widely supported by most members of the SFAC, the

SRSC, and other squid fishing industry and conservation groups, with some processors and fishermen in opposition.

The fleet size in 2005 was 165 squid vessels and 40 light boats. Eligibility was determined after purchase of a permit in the initial 1998-1999 season. Any licensed individual could participate during this initial year if the fisherman presented evidence that he or she had been a licensed California commercial fisherman for at least 20 years and had participated in the market squid fishery. There were three components to the Commission's policy to determine qualification: (1) initiating the program would not increase the recent level of fishing effort, (2) initial issuance of permits would only be to the current owners of qualifying vessels and, (3) to meet the needs of a fishery, it may be desirable to modify the approach of giving permits to current owners of qualifying vessels.

3.2.8.1. Scope of the Market Squid Limited Entry Program

Vessels landing less than two tons of squid incidentally on a per trip basis will not be required to possess a limited entry permit. Additionally, landing of squid beyond the jurisdiction of the state of California will not be affected by any limited entry requirements. Recreational fishing for squid will not require a limited entry permit, nor does fishing for squid for use as live bait.

Five major squid fishery permit categories have been established: 1) transferable market squid vessel owner permits, 2) non-transferable market squid vessel owner permits, 3) transferable Market Squid Brail Permits, 4) non-transferable Market Squid Brail Permits, and 5) Market Squid Light Boat Permits.

Any vessel engaged in taking squid, landing squid, or attracting squid by light for commercial purposes must have a valid market squid permit. Vessels taking squid for live bait purposes only are exempt from the permit requirements (§ 149, Title 14, CCR). Market Squid Transferable Vessel Permits are transferable to vessels of comparable capacity (within 10%). These permits can also transfer to a vessel of larger capacity under a "two for one" permit retirement. Market Squid Brail Permits are transferable based on comparable capacity (within 10%). Transferable Market Squid Light Boat Permits are transferable, and permit holders can upgrade to a transferable Market Squid Brail Permit on a "one for one" permit retirement.

3.2.9. Capacity Goal

As directed under the MSFMP A-1 limited entry program, the Commission adopted a vessel-based capacity goal of 55 Market Squid Vessel Permits, 34

Market Squid Light Boat Permits, and 18 Market Squid Brail Permits, with the intent for non-transferable permits to decline through attrition.

The Commission initially adopted the following transfer criteria:

- Establish full transferability of Market Squid Vessel Permits based on comparable capacity (within 10%).
- Establish transferability of Market Squid Vessel Permits to a vessel of larger capacity (greater than 10%) under a “2 for 1” permit retirement – this option will allow vessel owners to increase their vessel capacity by transferring their permit to a replacement boat and surrendering one additional permit. Permit holders wishing to increase their current capacity by more than 10% must acquire another Market Squid Vessel Permit and surrender it to the Department for retirement.
- Once the capacity goal has been achieved, individuals wishing to gain entry into the fishery must secure two permits: one permit must be surrendered to the Department for retirement and one permit would be issued to a vessel of comparable capacity. Market Squid Light Boat Permits cannot be used to secure a Market Squid Vessel Permit.

For Market Squid Vessel Permits, the adopted project establishes transferability of these permits to a vessel of comparable capacity, within 10%. This gives the permit holder some flexibility when another vessel is required, because it is often difficult to find exact matches in capacity and provides fishermen who wish to retire the opportunity to sell their boat and/or permit to new participants. Additionally, the adopted project allows upgrades via transfer to vessels of larger capacity under specified conditions. Using a “2 for 1” permit retirement system, those in the fleet wishing to increase their catching capacity may do so while simultaneously generating a net loss in overall capacity of the fleet, which will aid in achieving the capacity goal.

For Market Squid Brail Permits, the Commission adopted full transferability of these permits (See 2005 MSFMP, Option L.3) based on comparable capacity (within 10%). The Commission also decided to establish full transferability of Market Squid Light Boat Permits. This was allowed only if the initial number of permits issued is equal to or less than the capacity goal.

On 22 March 2005, the Commission sent notice of a change in the original proposed language for upgrading a Market Squid Light Boat Permit to a transferable brail permit. The original language stated that a light boat permit holder may exchange 2 light boat owner permits for one Market Squid Brail Permit. The change reflects the Commission’s decision to allow the holder of a transferable Market Squid Light Boat Permit to upgrade that

permit to a Transferable Market Squid Brail Permit, without the surrender of any additional permits (one-for-one upgrade).

3.2.10. Permit Fees

The adopted project required that an appropriate annual fee for market squid vessel, market squid brail, and Market Squid Light Boat Permits be established to: 1) cover the cost of squid research and management programs; and 2) provide adequate monitoring and implementation of a limited entry program (Table 3-2). Revenue is also generated from fees levied on squid landings (\$3.80 per ton) this source of funding is variable and dependent entirely on the success of the fishery year-to-year. Any permit fee established needs to be reevaluated periodically.

Table 3-2. Annual permits fees and transfer fees as of April 2024 (Reproduced from California Commercial Fishing Regulations Digest, CDFW 2024b).

Permit Type	Fee
Market Squid Vessel (Transferable)	\$3,636.00
Market Squid Vessel (Non-Transferable)	\$1,822.25
Market Squid Brail (Transferable)	\$3,636.00
Market Squid Light Boat (Transferable)	\$1,096.00
Market Squid Light Boat (Non-Transferable)	\$72.36
Market Squid Transfer Fee	\$500.00
Market Squid Brail (Upgrade from light boat)	\$1,500.00

Initial annual permit fees and transfer fees established by the original MSFMP in March 2005 (CDFG 2005) were: Market Squid Vessel Permit – Transferable = \$2,000 Market Squid Vessel Permit – Non-Transferable = \$1,000 Market Squid Brail Permit – Transferable = \$2,000 Market Squid Brail Permit – Non-Transferable = \$1,000 Market Squid Light Boat Permit - Transferable = \$600

3.2.10.1. Permit Transfer Fees

The Commission chose to set the permit transfer fee at \$500. The adopted project established an appropriate fee to transfer market squid vessel, market squid brail, and Market Squid Light Boat Permits to assist with transfer administrative costs. The permit upgrade fee from a transferable light boat permit to a transferable brail permit, with the surrender of the light boat permit, is \$1500.

3.2.11. Experimental Market Squid Vessel Permits

In 2005, the Commission established 3 experimental market squid vessel non-transferable permits, which allowed the Commission to issue 3 non-transferable Market Squid Vessel Permits to any individual for placement on any vessel for purposes of developing a squid fishery in areas previously not utilized for squid production. Individuals issued permits pursuant to this section were required to adhere to all commercial squid fishing regulations in CCR Title 14 §149, and all terms and conditions for permits defined in CCR Title 14 §149.1, excepting initial issuance criteria defined in CCR Title 14 §149.1(c). These permits counted toward the capacity goal. In 2021, CCR Title 14 §149.3 was repealed in conjunction with of a newly created program for experimental fishing permits (EFP).

Individuals interested in pursuing small-scale opportunities should utilize the EFP program that was established in 2022. The Department will work with potential EFP applicants to develop EFPs that would allow for limited small-scale fishery opportunities outside the primary commercial fishing areas and not to compete with the existing limited entry program, and to allow for testing for the viability and enforceability of small-scale commercial fishing.

3.3. Ecological Considerations

As part of the 1997 legislation enacted to protect the market squid resource, the Department was directed to determine where there are areas, if any, that should be declared harvest replenishment areas for market squid where the taking of squid would not be permitted. Harvest replenishment areas for market squid would serve to:

- protect spawning habitat,
- function as forage reserves,
- offer protection against bycatch and fishery interactions, and
- provide areas of uninterrupted spawning for market squid.

In October 2002, the Commission designated 12 new MPAs at the northern Channel Islands (three of which replace existing reserves at Anacapa, Santa Barbara and San Miguel islands). These areas include known commercial squid fishing sites at Santa Barbara, Anacapa, Santa Cruz, and Santa Rosa islands. In addition to the closures at the Northern Channel Islands, commercial fishermen are not allowed to fish in state-designated ecological reserves using roundhaul nets. Several existing reserves are known to be market squid spawning sites (e.g., Carmel Bay Ecological Reserve, Point Lobos Ecological Reserve, northeast side of Santa Catalina Island and Santa Monica Bay); all serve as harvest replenishment areas for market squid. Also,

based on the large geographic range (Baja California north to Alaska) of market squid, there is an abundance of areas where squid are not fished. The MPAs and ecological reserves meet all of the goals of a harvest replenishment area. Marine protected areas have multiple uses, including 1) providing a buffer for species against the effects of environmental fluctuations and management uncertainties, 2) protecting specific areas or species from overexploitation, or 3) reducing user conflict.

The market squid resource is also important to the recreational fishery. Further, market squid is a significant component in the diets of numerous seabirds, marine mammals, and fish. The MPAs and ecological reserves will function as forage reserves for the many species that consume market squid.

Several seabird species are the focus of squid fishery interactions with seabirds, including: the federally and State-listed endangered and fully protected California brown pelican (*Pelecanus occidentalis*), State-listed threatened Guadalupe murrelet (*Synthliboramphus hypoleucus*) and Scripps's murrelet (*Synthliboramphus scrippsi*), and Department species of special concern (SSC) ashy storm-petrel (*Oceanodroma homochroa*).

In total, there are 15 seabird species that breed on Santa Barbara, Anacapa and San Miguel islands (including two endangered species, one threatened species and five SSC) while 12 seabird species breed at the Farallon Islands (including four SSC) (Table 3-3 and 3-4). In addition to these nesting species, there are numerous other species associated with State waters that forage near these islands.

Table 3-3 Diurnal seabird species that breed (indicated by an X) in the Channel Islands and the Farallon Islands. ANA= Anacapa, SBI= Santa Barbara, SMI= San Miguel, SRI= Santa Rosa, SCR= Santa Cruz, CAT= Santa Catalina, SCL= San Clemente, SNI= San Nicolas. R= Roost site.

Diurnal Species	ANA	SBI	SMI	SRI	SCR	CAT	SCL	SNI	Farallon Is.
California Brown Pelican*	X	X	R	--	R	--	R	R	--
Double-Crested Cormorant**	X	X	X	--	--	--	--	X	X
Brandt's Cormorant	X	X	X	X	X	--	X	X	X
Pelagic Cormorant	X	X	X	X	X	--	--	--	X
Western Gull	X	X	X	X	X	X	X	X	X
Pigeon Guillemot	X	X	X	X	X	--	--	--	X
Tufted Puffin**	--	--	X	--	--	--	--	--	X
Western Snowy Plover ‡, **	--	--	-X	X	--	--	--	--	--
Black Oystercatcher	X	X	X	X	X	--	X	X	X
Common Murre	--	--	--	--	--	--	--	--	X

*Federally and State listed as endangered

** Department Species of Special Concern (SSC)

‡ Federally listed as threatened

Table 3-4 Nocturnal seabird species that breed (indicated by an X) in the Channel Islands and the Farallon Islands. ANA= Anacapa, SBI= Santa Barbara, SMI= San Miguel, SRI= Santa Rosa, SCR= Santa Cruz, CAT= Santa Catalina, SCL= San Clemente, SNI= San Nicolas. P= probable nesting.

Nocturnal Species	ANA	SBI	SMI	SRI	SCR	CAT	SCL	SNI	Farallon Is.
Ashy Storm-Petrel**	P	X	X	--	X	X	X	--	X
Black Storm-Petrel**	--	X	X	--	--	X	X	--	--
Leach's Storm-Petrel	--	X	X	--	--	--	--	--	X
Guadalupe Murrelet**, ***	--	X	--	--	--	--	X	--	--
Scripp's murrelet	X	X	X	--	X	X	X	--	--
Rhinoceros Auklet**	--	--	X	--	--	--	--	--	X
Cassin's Auklet	X	X	X	--	X	--	--	--	X

** Department Species of Special Concern

*** State listed as threatened

3.3.1. Area and Time Closures to Address Seabird Issues

The Commission established an area closure to squid fishing with the use of attracting lights in the Greater Farallones National Marine Sanctuary with boundaries defined as of 27 August 2004. This would protect not only the seabirds that breed and rear on the Farallon Islands, but also protect a large forage area (3,250 km²) in the waters surrounding the islands from light disturbance and interactions with squid vessels.

Under this option, noise associated with squid fishing activities has the potential to cause disturbances to seabirds.

The Department, with support from the SFAC, has developed a draft Fishery “Best Practices” document to be distributed to all commercial squid fishery participants. The Department will continue to collaborate with researchers to evaluate potential wildlife interactions (primarily nocturnal seabirds at the Channel Islands National Park) using squid fishery log data. The Best Practices document includes precautionary conservation measures that squid fishing vessels should implement near shorelines and in sensitive bird nesting regions. Evaluations of interactions will use long-term monitoring to inform potential wildlife interactions.

3.4. Administrative Items

3.4.1. Advisory Committee for Squid Fishery

The Commission in its adoption of §53.02 to Title 14, CCR established that the Director may create an advisory committee to assist the Department with development and review of fishery assessments, management options and proposals, and Plan amendments. This squid fishery advisory committee shall be comprised of industry, science, and environmental community members.

The committee will assist the Department by providing recommendations regarding the effectiveness of adopted squid management.

Chapter 4. Research to Support the Market Squid Fishery Management Plan

At the core of the MLMA is the principle of basing decisions on best available scientific information as well as other information that the Department and Commission possess [FGC §7050(b)(6)]. The MLMA includes, as a broad objective, promotion of marine ecosystem research that will enable better management decisions [FGC §7050(b)(5)]. Within the general policy on science and living marine resources, the MLMA establishes specific policies for the management of marine fisheries. Generally, fishery management decisions are to be based on best available scientific or other relevant information readily available, including what the MLMA calls EFI.

The MLMA defines EFI, with regard to a marine fishery, as information about fish life history and habitat requirements, the status and trends of fish populations, fishing effort, and catch levels, fishery effects on fish age structure and on other living marine resources and users. The MLMA calls upon the Department to collect EFI for all marine fisheries managed by the State in cooperation with participants in the fishery [FGC §7060(a)(b)]. To foster improvements in the management of individual fisheries, the MLMA requires that fishery management plans include research protocols that identify critical information gaps and the steps that will be taken to close gaps [FGC §7081].

Protocols are to describe the following:

- Past and current monitoring of the fishery;
- EFI, such as age structure of a population and spawning season, and other relevant information; and
- Plans for additional monitoring and research needed to acquire EFI.

The MLMA provides an opportunity for fishermen, scientists, fishery managers, conservationists, and others to develop a system for obtaining the information needed to manage our living marine resources.

Although much biological information has been gathered on market squid in the past 50 years, EFI is lacking in many areas for the species. Future research should be directed toward acquiring EFI and involving collaborative efforts of the fishing industry (both commercial and recreational) and qualified university or private fisheries research institutions. In accordance with MLMA, chapter 4 describes fishery research protocols designed to advance the MSFMP A-1. Additionally, chapter 4 identifies gaps in the current knowledge of market squid stocks and the fishery, and the steps needed to obtain

information for implementation to be successful. Chapter 4 describes a research plan that is designed to incorporate the goals of the MLMA with the objectives for the management of the California market squid fishery.

4.1. Past and Ongoing Monitoring of the Commercial Fishery

4.1.1. Sustainable Fishery Control Rules

Monitoring total market squid landings is necessary to ensure established limits are maintained. Fishery control rules determine levels for take and upper limits on take. Information on biomass, reproductive potential and productivity, and age composition, as well as other biological, social, and economic parameters, is necessary to directly and accurately calculate allowable fishing mortality. In some areas, market squid are in a data-rich situation while other areas are data-poor. The result is that some basic EFI is not generally available.

Although the PFMC adopted the egg escapement method to monitor the market squid fishery setting the egg escapement threshold level at 30%, there are several areas that require further research or refinement including:

- Verify that the current threshold level of egg escapement promotes sustainability of the fishery;
- Information is needed regarding duration of spawning, egg-laying rate, rate of maturation and natural mortality on spawning grounds;
- Fishery-dependent sources of mortality of eggs spawned such as impacts to egg beds by fishing gear should be investigated as they are not quantified in the egg escapement threshold
- Test and explore the potential use of EDM for management procedures and further evaluation under climate change
- Egg escapement methodologies need spatial and temporal evaluation of northern and southern fisheries.

4.1.2. Fishery-Dependent Monitoring

4.1.2.1. Past Fishery-Dependent Monitoring

Landing receipts were the earliest form of fishery-dependent data collected from the commercial market squid fishery. The Department began collecting receipts in 1927 for all commercial fisheries to provide general knowledge of fishing activity, specifically in terms of amount landed, landing location, gears used, and value of the catch. The Department actively monitors the commercial market squid fishery by collecting dockside port samples and logbook information. The monitoring program began in October 1998, and logbook information became mandatory in 2000. The Commission

maintained existing fishery-dependent market squid monitoring programs as one of the original MSFMP fishery control rules in 2004. The primary goal of collecting these data is to monitor changes in the biological characteristics and to characterize California's commercial market squid fishery for development of population models.

Sample collection is centered on the major port complexes of landing, which include Monterey (Monterey and Moss Landing), Santa Barbara (Santa Barbara, Ventura, and Port Hueneme), and Los Angeles (San Pedro and Terminal Island). Other ports such as Eureka, Bodega Bay, Half Moon Bay, and San Francisco are included when landings are significant in those areas. Standardized protocols are used to maintain consistent sampling among port complexes. During the offloading process samplers make visual observations of species composition and incidental catch. They also record % composition of CPS (Pacific sardine, Pacific mackerel, jack mackerel, northern anchovy) by volume of the total landing. All other incidental species observed in the landing are noted, with special attention paid to prohibited or protected species (e.g., salmon). The observations are reported in PFMC CPS Stock Assessment and Fishery Evaluation reports.

4.1.2.2. Market Squid Logbook Program

Market Squid Vessel and Light/Brail Boat Logbooks (logs) are a mandated system for fishermen to record their fishing activities. These data supplement landing receipts. Logbook data are used to monitor fishing locations, environmental conditions, fishing effort, catch amounts, use of catch, and fleet characterization and capacity. The Department is working with fishery participants to develop an electronic logbook (e-log) for the California market squid commercial fishery. Once developed and tested, the new e-log may replace the current paper logbooks.

4.1.2.3. Additional Sampling Efforts

The Department has assisted with additional market squid sample collections to supplement various independent and collaborative research projects over time. These studies were generally intended to increase understanding of market squid life history (Table 4-1).

Table 4-1. Summary of market squid sample collections for independent and collaborative research projects over time.

Time Period	Principal Investigator	Resulting Publications	Samples Collected	General Purpose
1999 - 2001	John Butler	Butler et al. 2001	Gonad weight, mantle weight, statoliths	To develop the ageing methodology for market squid, to look at fecundity in terms of batch fecundity and age at maturity, and to develop a population model for market squid.
1999 - 2002	William Gilly	Gilly 2003	Gill filaments	To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery, as well as between nearshore and offshore populations in Monterey.
2008 - 2009	Robert Warner	Warner et al. 2009	Egg cases	To identify geographic differences in trace element concentrations in adult natal core and early larval areas of statoliths, ultimately for use in identifying source populations of stocks.
2008 - 2009	Mark Lowry	Not Published	Mantle length	Regression analysis on mantle length to beak size.
2014 - 2015	Samantha Cheng	Cheng et al. 2020	Egg cases	To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery.

4.1.3. Fishery-Independent Research

4.1.3.1. Past Fishery-Independent Research

Fishery-independent data on juvenile market squid come from annual Rockfish Recruitment and Ecosystem Assessment reports (e.g., juvenile rockfish surveys). The CPUE of regional forage (northern anchovy, Pacific sardine, krill, market squid, juvenile rockfish, juvenile sanddabs, and juvenile Pacific hake (*Merluccius productus*) in the central CCE (defined as the nearshore region of the eastern Pacific between Crescent City Harbor and Point Conception) is measured annually using NOAA trawl surveys in spring or summer. These data are publicly available at the NOAA California Current Integrated Ecosystem Assessment (CCIEA) website (CCIEA 2023).

In addition, there is a long-standing data series of market squid paralarvae abundance from surveys conducted through collaborative efforts by multiple agencies and the fishing industry. These data, in part, come from California Cooperative Oceanic Fisheries Investigations (CalCOFI), a multi-agency

partnership between the Department, NOAA, and Scripps Institution of Oceanography formed in 1949 to study the ecological aspects of the Pacific sardine population. Recent focus has shifted to include the overall study of the marine environment off California, the management of its living resources, and monitoring the indicators of climate change. Quarterly surveys are conducted off southern and central California, collecting hydrographic and biological data on static stations over transect lines. Biological data collection methods include Continuous Underway Fish Egg Sampler, trawling, bongo net tows for displacement volumes of zooplankton and pelagic invertebrate, and fisheries acoustics. A bongo net consists of paired plankton net bags 2.5 m long attached to stainless steel rings 60 cm in diameter. CalCOFI data are accessible to the public through their data server (CalCOFI 2021).

Paralarvae abundance surveys make up the largest fisheries-independent data series for the market squid fishery. Sampling was opportunistic prior to 2010, but since then California Wetfish Producers Association (CWPA) has maintained standardized surveys. CWPA conducts the paralarval surveys at least four times each year in the SCB (following the CalCOFI schedule when possible) and twice a year in the greater Monterey Bay and Half Moon Bay area; during which they also collect water samples at select sampling stations. Original studies investigated the correlation between paralarvae abundance and CPUE of the fishery (Zeidberg et al. 2006; Koslow and Allen 2011). Zeidberg et al. (2006) used samples collected inshore from independent research cruises from 2000 to 2003. This paralarvae density index correlated with CPUE showing a significant stock recruitment relationship, although collections only spanned four years.

Koslow and Allen (2011) used manta tow samples taken from quarterly CalCOFI surveys from 1981 to 2008, which are located offshore from the Zeidberg et al. (2006) study. These manta tows were conducted 8 cm below the air-sea interface using a neuston net, which has a large, rectangular net frame. Results from the Koslow and Allen (2011) study were less significant; however, the data spanned 20 yr and were only correlated at an annual scale. The CWPA initially implemented bongo tows in 2005. The original intent of this work was to supplement the CalCOFI survey by providing samples nearshore, adjacent to known spawning sites, since CalCOFI sample sites rarely overlap squid paralarvae habitat. The CWPA trained operators to tow bongo nets, but comprehensive sampling was not always logistically possible. Beginning in January 2011, CWPA chartered dedicated fishing vessels for the specific purpose of conducting these small net tows on a systematic schedule. There is a difference, however, in the collection methods between these studies. Koslow and Allen (2011) analyzed CalCOFI manta tow data because squid presence was greater in the surface-oriented manta nets

than in the offshore obliquely deployed bongo tows. However, bongo tows are considered more appropriate since they tend to sample 2-week-old squid, which have survived the critical stage of first feeding. Manta tows may sample day old squid. Additionally, the older paralarvae begin to migrate to deeper depths, thereby avoiding mortality from radiation and surface predation.

This paralarvae sampling project aims to better understand the physical and ecological factors that control recruitment to major spawning grounds, and to improve the assessment of market squid stocks off California. The CFWPA has also worked with the SWFSC to determine, through stoichiometry, if the chemistry in the water matches or differs from the chemistry of the paralarval and adult statoliths. The Department has collected market squid samples from commercial fishery landings that coincide with these surveys and similar research. Using paralarvae and adult samples, Warner et al. (2009) found geographic differences in trace element concentrations in the statoliths of paralarval market squid. The chemical signatures of adult statoliths closely matched those of paralarvae suggesting that matching fingerprints of ripe eggs and adults six months after could indicate the degree of mixing of market squid populations on ecological timescales.

4.2. Current Knowledge of Essential Fishery Information

Fishery-dependent EFI collected through the Department's Market Squid Monitoring and Sampling Program include:

- Landings and effort – tonnage per day and week, number of vessels, and fishing location/block. The Department monitors tonnage to ensure closure of the fishery before the catch limit of 107,048 mt (118,000 tons) is exceeded.
- Biological – individual weight, length, sex, maturity, dried mantle weight, and gonad weight. Gonad weights are used to provide information for the egg escapement model that is intended for use as F_{MSY} proxy.

4.3. Research to Obtain Essential Fishery Information

4.3.1. E-Logs

In the effort of modernizing and advancing the market squid logbook, the Department, EDM team, and SFAC described and discussed specific examples of modifications to data fields and the information collected. Electronic data collection in the form of an e-log could generate more timely and reliable information as well as reduce time and effort for vessel operators and Department staff. By minimizing manual entry and written records of detailed information such as GPS coordinates, the validity and accuracy of

data collected can improve. An e-log also enables more real-time monitoring, better quality assurance and quality control, and improved compliance.

4.3.2. Empirical Dynamic Modeling

While market squid is currently considered a sustainable fishery, a need exists to modernize management and planning in the context of climate change. In the primary fishing grounds, located in the southern region of California, market squid landings, larval abundance, and size at maturity declined during major El Niño events. Empirical dynamic modeling (EDM) captures nonlinear dynamics and system drivers that haven't been measured by including lags (i.e., previous measurements of the same data stream at different time steps). EDM can be used to make predictions based on patterns in long-term data such as environmental drivers and are unbiased by predetermined model equations. EDM can work particularly well for short-lived species (Giron-Nava et al., 2017; Munch et al., 2018). Preliminary work conducted using EDM indicated there is the capability to forecast market squid landings, tease out complex spatial and temporal dynamics, and highlight survey information of greatest value.

During the 2023-2024 SFAC process, members were interested in exploring alternative, forecast-driven, or in-season ways to manage catch. In response, the Department in collaboration with a post-doc investigator, explored the potential use of EDMs to forecast future squid landings in response to varying fishing effort and climate scenarios. EDM can be used to make predictions based on patterns in long-term data such as environmental drivers, and work particularly well for short-lived species. EDM work during the 2023-2024 SFAC process focused on forecasting future squid landings and CPUE in response to varying levels of effort and environmental conditions. EDM is an area for further exploration given that expansions, shifts, or dramatic changes in market squid landings (or proxies for abundance) at various life stages are likely to occur under environmental extremes and changes.

Chapter 5. Future Management Needs and Management Costs

5.1. Current Information Gaps

The primary information gaps for the market squid fishery are outlined in the Department's Market Squid Enhanced Status Report (<https://marinespecies.wildlife.ca.gov/market-squid/true/>) and include the following main areas: egg escapement model assumptions; further exploring climate readiness and oceanographic variables, and ageing. Additionally, moving fisheries-dependent data collection to a digital platform (e-logs) is a top priority. The Department would also greatly benefit from more long-term fisheries-independent data collection, including continued collaboration with academia scientists and organizations, non-governmental organizations, outside agencies, and commercial and recreational fishery participants. Future efforts could be aimed at expanding the inflow of fishery-independent data to help determine ecosystem level connections. Understanding how shifting oceanographic conditions govern changes in market squid physiology, behavior, and spawning success will help to inform future management.

5.2. Potential Future Management Changes

The California market squid population is inherently resilient to fishing and largely dependent on seasonal recruitments. The fishing fleet targets market squid when available and turns to alternative fisheries when squid are not aggregating. While market squid is currently considered a sustainable fishery with an adequate regulatory framework, opportunities may exist in the future to improve fishery management.

5.3. Annual Management Cost

The estimated costs for implementation of the MSFMP A-1 are grouped into two main categories: 1) enforcement and 2) ongoing management and research. These costs estimates were produced by projecting the time to perform certain tasks such as the enforcement of regulations, collection and analysis of data, and review of documents. Annual management costs of the market squid fishery have increased since implementation of the original MSFMP. Current annual management costs include work in the continuation, maintenance, and improvement of the port sampling and logbook programs. Costs also include Department staff support for various collaborative research projects over time. Management costs also include enforcement of adopted regulations used to ensure the fishery's

sustainability. Enforcement costs include both on-the-water monitoring as well as dockside and office-based work to follow through with enforcement actions. Estimated costs to implement the MSMFP, using 2025 staffing and salaries, are summarized in Table 5-1.

Table 5-1. Estimated annual implementation costs for the MSFMP A-1 (2025 baseline).

Cost Category	Annual Cost*	Percent of Year	Annual Cost
Environmental Program Manager	\$287,490	20%	\$57,498
Senior Environmental Scientist (Supervisor)	\$248,622	30%	\$74,587
Senior Environmental Scientist (Specialist)	\$193,982	100%	\$193,982
Environmental Scientist (2)	\$300,852	50%	\$150,426
Fish and Wildlife Scientific Aid (4)	\$191,852	75%	\$143,859
Fish and Game Captain	\$241,504	20%	\$48,301
Fish And Game Lieutenant (Supervisor) (2)	\$429,074	15%	\$64,361
Fish and Game Warden (6)	\$970,926	15%	\$145,639
Management Operating Cost	\$50,000	--	\$50,000
Enforcement Operating Cost	\$50,000	--	\$50,000
Total Annual Cost	--	--	\$978,653

*Annual personnel costs include salaries/wages and benefits.

Literature Cited

- Ainley, D.G., Spear, L.B., Allen, S.G., and C.A. Ribic. 1996. Temporal and spatial patterns in the diet of the common murre in California waters. *The Condor* 98:691-705.
- Anderson F.E. 2000. Phylogenetic relationships among loliginid squids (Cephalopoda: Myopsida) based on analyses of multiple data sets. *Zoological Journal of the Linnean Society* 130:603-633.
- Baltz, D.M. and G. V. Morejohn. 1977. Food habits and niche overlap of seabirds wintering on Monterey Bay, California. *The Auk*, 94(3):526–543.
- Berry, SS. 1911. Notes on some cephalopods in the collection of the University of California. *University of California Publications in Zoology* 8(7):301-310.
- Bettencourt, B., Coelho, L., Andrade, J.P., and A. Guerra. 1996. Age and growth of the squid *Loligo vulgaris* off the south coast of Portugal, using statolith analysis. *Journal of Molluscan Studies* 62:359-366.
- Birt, T.P., Carter, H.R., Whitworth, D.L., McDonald, A., Newman, S.H., Gress, F., Palacios, E., Koepke, J.S., and V.L. Friesen. 2012. Rangewide population genetic structure of Xantus's Murrelet (*Synthliboramphus hypoleucus*), *The Auk*, Volume 129, Issue 1, 1 January 2012, Pages 44–55, <https://doi.org/10.1525/auk.2011.11011>.
- Butler, J., Fuller, D., and M. Yaremko. 1999. Age and growth of market squid (*Loligo opalescens*) off California during 1998. *CalCOFI Reports* 40:191-195.
- Butler, J., Wagner, J., and A. Henry. 2001. Age and growth of *Loligo opalescens*. *PFMC Squid Stock Assessment Review*. 13 pp.
- California Cooperative Oceanic Fisheries Investigations (CalCOFI). 2021. <https://calcofi.org>. Accessed on June 31, 2022.
- California Current Integrated Ecosystem Assessment (CCIEA). 2023. <https://oceanview.pfeg.noaa.gov/cciea-plotting/?opentab=0&ind=27>. Accessed on July 9, 2024.
- California Department of Fish and Game (CDFG). March 19, 2001. Status of the Market Squid fishery with Recommendations for a Conservation and Management Plan. California Department of Fish and Game Marine Region Report to Legislature. 73 p.

CDFG. March 25, 2005. Final Market Squid Fishery Management Plan. 566 p.

California Department of Fish and Wildlife (CDFW). 2024a. Market Squid, *Doryteuthis (Loligo) opalescens*. Enhanced Status Report.
<https://marinespecies.wildlife.ca.gov/market-squid/true/>.

CDFW. 2024b. 2024 California commercial regulations fishing digest.
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=191712&inline>.

Cheng, S., Gold, M., Rodriguez, N., and P. Barber. 2021. Genome-wide SNPs reveal complex fine-scale population structure in the California market squid fishery (*Doryteuthis opalescens*). *Conservation Genetics* 22:97-110.

Dailey, M.D. 1969. A survey of Helminth parasites in the squid *Loligo opalescens*, Smelt, *Osmerus mordax*, jack mackerel, *Trachurus symmetricus*, and Pacific mackerel, *Scomber japonicus*. *California Fish and Game* 55(3):221-226.

Dickerson, T. and R. Leos. 1992. California market squid. *In* California's living marine resources and their utilization, CA Sea Grant, pp. 36-39.

Dorval, E., Crone, P.R., and J.D. McDaniel. 2013. Variability of egg escapement, fishing mortality and spawning population in the market squid fishery in the California Current Ecosystem. *Marine and Freshwater Research* 64(1):80-90.

Dorval, E., Porzio, D., and K. Grady. 2024. An update of egg escapement, fishing mortality, and spawning stock biomass for the California market squid (*Doryteuthis opalescens*) fishery from 1999 to 2022. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-701.
<https://repository.library.noaa.gov/view/noaa/61452>.

Fiechter, J., Huckstadt, L.A., Rose, K.A., and D.P. Costa. 2016. A fully coupled ecosystem model to predict foraging ecology of apex predators in the California Current. *Marine Ecology Progress Series* 556:273-285.

Fields, W.G. 1965. The structure, development, food relations, reproduction, and life history of the squid *Loligo opalescens* Berry. *California Department of Fish and Game Fish Bulletin* 131:1-108.

Forsythe, J., Kangas, N., and R. Hanlon. 2004. Does the California market squid (*Loligo opalescens*) spawn naturally during the day or night? A note on the successful use of ROVs to obtain basic fisheries biology data. *Fishery Bulletin* 102:389-392.

- Gabriel, W.L., Sissenwine, M.P., and W.J. Overholtz. 1989. Analysis of spawning stock biomass per recruit: An example from Georges Bank haddock. *North American Journal of Fisheries Management* 9:383-391.
- Gilly, W.M. 2003. Population analysis of the California market squid, *Loligo opalescens* using DNA microsatellite analysis. Final report to the California Department of Fish and Game. Contract Number FG7334MR.
- Gilly, W., Fountain, M., and A. Novakovic. 2001. Population analysis of the California market squid, *Loligo opalescens*, using DNA microsatellite analysis. *In* Status of the market squid fishery with recommendations for a conservation and management plan. California Department of Fish and Game Marine Region Report to the Legislature. Appendix D.
- Giron-Nava, A., James, C.C., Johnson, A.F., Dannecker, D., Kolody, B., Lee, A., Nagarkar, M. Pao, G.M., Ye, H., Johns, D.G., and G. Sugihara. 2017. Quantitative argument for long-term ecological monitoring. *Marine Ecology Progress Series* 572:269-274.
- Groot, C. and L. Margolis. 1991. Pacific salmon life histories. UBC Press, Vancouver, Canada. 500 pp.
- Hanlon, R.T., Kangas, N., and J.W. Forsythe. 2004. Egg-capsule deposition and how behavioral interactions influence spawning rate in the squid *Loligo opalescens* in Monterey Bay, CA. *Marine Biology* 145:923-930.
- Hardwick, J.E. and J.D. Spratt. 1979. Indices of the availability of market squid, *Loligo opalescens*, to the Monterey Bay fishery. *CalCOFI Reports* 20:35-39.
- Hastings, S., and S. MacWilliams. 1999. Multi-species and multi-interest management: an ecosystem approach to market squid (*Loligo opalescens*) harvest in California. Marine Sanctuaries Conservation Series MSD-99-1. U.S. Dept. of Commerce, NOAA, Marine Sanctuaries Division, Silver Spring, MD. 24 pp.
- Hill, K.T. and M.L. Yaremko. 1997. Spatial and temporal distributions of market squid (*Loligo opalescens*) off California based on commercial landings and aerial observation data. Abstract in CalCOFI Program, 28-30 October 1997 at Lake Arrowhead, California.
- Hunt, J.C., Zeidberg, L.D., Hamner, W.M., and B.H. Robison. 2000. The behavior of *Loligo opalescens* (Mollusca: Cephalopoda) as observed by remotely operated vehicle (ROV). *Journal of Marine Biological Association U.K.* 80: 873-883.

- Hurley, A.C. 1977. Mating behavior of the squid *Loligo opalescens*. *Marine Behavior and Physiology* 4(3): 195-203.
- Hurley, G.V., Odense, P., O'Dor, R.K. and E.G. Dawe, 1985. Strontium labelling for verifying daily growth increments in the statoliths of the short-finned squid (*Illex illecebrosus*). *Canadian Journal of Fisheries and Aquatic Sciences* 42: 380-383.
- Isaac, G., Neumeister, H., and W.F. Gilly. 2001. The effects of temperature on early life stages of California squid (*Loligo opalescens*). *PFMC Squid Stock Assessment Review*. 15 pp.
- Jackson, G.D. 1990a. The use of tetracycline staining techniques to determine statolith growth ring periodicity in the tropical loliginid squids, *Loliolus noctiluca* and *Loligo chinensis*. *Veliger* 33: 389-393.
- Jackson, G.D. 1990b. Age and growth of the tropical nearshore loliginid squid *Sepioteuthis lessoniana* determined from statolith growth-ring analysis. *Fishery Bulletin* 88: 113-118.
- Jackson, G.D. 1994. Statolith age estimates of the loliginid squid *Loligo opalescens* (Mollusca: Cephalopoda) corroboration with culture data. *Bulletin of Marine Science* 54: 554-557.
- Jackson, G.,D. 1998. Research into the life history of *Loligo opalescens*: where to from here? *CalCOFI Reports* 39:101-107.
- Jackson, G.D. and M.L. Domeier. 2003. The effects of an extraordinary El Niño / La Niña event on the size and growth of the squid *Loligo opalescens* off southern California. *Marine Biology* 142:925-935.
- Jereb, P., Vecchione, M., and C.F.E. Roper. 2010. Family Loliginidae. In P. Jereb and C.F.E. Roper, eds. *Cephalopods of the world. An annotated and illustrated catalogue of species known to date. Volume 2. Myopsid and Oegopsid Squids*. *FAO Species Catalogue for Fishery Purposes* 4(2): 38-117.
- Karpov, K.A. and G.M. Cailliet. 1978. Feeding dynamics of *Loligo opalescens*. *California Department of Fish and Game, Fish Bulletin* 169:45-65.
- Karpov, K.A. and G.M. Cailliet. 1979. Prey composition of the market squid, *Loligo opalescens* Berry, in relation to depth and location of capture, size of squid, and sex of spawning squid. *CalCOFI Reports* 20:51-57.
- Kato, S. and J.E. Hardwick. 1975. The California squid fishery. *FAO Fisheries Report* 170:107-116.

- Koslow, J.A. and C. Allen. 2011. The influence of the ocean environment on the abundance of market squid, *Doryteuthis* (= *Loligo*) *opalescens*, paralarvae in the Southern California Bight. CalCOFI Reports 52:205-13.
- Lipinski, M. 1986. Methods for the validation of squid age from statoliths. Journal of the Marine Biological Association of the United Kingdom 66:506-526.
- Lowry, M.S. and J.V. Carretta. 1999. Market squid (*Loligo opalescens*) in the diet of California sea lions (*Zalophus californianus*) in southern California (1981-1995). CalCOFI Reports. 40:196-202.
- Lutz, S. and L. Pendleton. 2000. An assessment of the market squid and other major commercial wetfish fisheries of southern California. USC- Southern California Fisheries Project.
- Lutz, S. and L. Pendleton. 2001. Socio-economic study of the San Pedro historic purse seine fleet. Coastal Community Research, Wrigley Institute for Environmental Studies, University of Southern California. Los Angeles, CA. 39 pp
- Macewicz, B.J., Hunter, J.R. and N.C.H. Lo. 2001a. Validation and monitoring of the escapement fecundity of market squid. Project report to California Department of Fish and Game. Document #2, PFMC Squid Stock Assessment Review. 8 pp.
- Macewicz, B.J., Hunter, J.R., Lo, N.C.H., and E.L. LaCasella. 2001b. Lifetime fecundity of the market squid, *Loligo opalescens*. Document #1, PFMC Squid Stock Assessment Review. 19 pp.
- Macewicz, B.J., Hunter, J.R., Lo, N.C.H., and E.L. LaCasella. 2004. Fecundity, egg deposition, and mortality of market squid (*Loligo opalescens*). Fishery Bulletin 102(2):306-327.
- Maxwell M.R., Jacobson, L.D., and R.J. Conser. 2005. Eggs-per-recruit model for management of the California market squid (*Loligo opalescens*) fishery. Canadian Journal of Fisheries and Aquatic Sciences 62(7):1640-1650.
- Morejohn, G.V., Harvey, J.T., and L.T. Krasnow. 1978. The importance of *Loligo opalescens* in the food web of marine vertebrates in Monterey Bay, California. California Department of Fish and Game, Fish Bulletin 169:67-98.

- Morris, R.H., Abbott, D.P., and E.C. Haderlie. 1980. Intertidal Invertebrates of California. Stanford: Stanford University Press. 690 pp.
- Marine Stewardship Council (MSC). 2023. California Market Squid Producers Alliance Purse Seine. Public Certification Report.
<https://cert.msc.org/FileLoader/FileLinkDownload.aspx/GetFile?encryptedKey=YBrd9qdSdYebTvdXylxCmpGLLSrND5YzuqFP6K1ejnD65qo8UjKGS17dUI0+CvB4>
- Munch, S.B., Giron-Nava, A., and G. Sugihara. 2018. Nonlinear dynamics and noise in fisheries recruitment: A global meta-analysis. *Fish and Fisheries* 19:964-973.
- NOAA. 2023. List of Fisheries <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries#lists-of-fisheries>. Accessed on July 9, 2024.
- O'Dor, R.K. and D.M. Webber 1986. The constraints on cephalopods: why squid aren't fish. *Canadian Journal of Zoology*. 64:1591-1605.
- Okutani, T. and J. McGowan. 1969. Systematics, distribution, and abundance of the epipelagic squid (Cephalopoda, Decapoda) larvae of the California Current April 1954 - March 1957. *Bulletin of Scripps Institute of Oceanography University of California* 14: 1-90.
- Pacific Fishery Management Council (PFMC). 1998. Amendment 8 to the northern anchovy fishery management plan incorporating a name change to: The coastal pelagic species fishery management plan. December 1998, p. D-9.
- PFMC. 2002. Limited entry fleet capacity and market squid maximum sustainable yield control rule. Amendment 10 to the Coastal Pelagic Species Fishery Management Plan. July 2002. 224 pp.
- PFMC. 2010. Status of the Pacific Coast Coastal Pelagic Species Fishery and Recommended Acceptable Biological Catches, Stock Assessment and Fishery Evaluation. 79 pp.
- PMFC. 2023. Coastal Pelagic Species Fishery Management Plan. As amended through Amendment 21.
- Pomeroy, C. and M. FitzSimmons. 2001. Socio-economic organization of the California Market Squid Fishery: Assessment for optimal resource management. California Sea Grant Project. Final Report. 18 pp.

- Protasio, C.Q., Holder, A.M., and B.C. Brady. 2014. Changes in biological characteristics of the California market squid (*Doryteuthis opalescens*) from the California commercial fishery from 2000-01 to 2012-13. *California Fish and Game* 100(2):276-299.
- Recksiek, C.W. and H.W. Frey (Editors). 1978. Biological, oceanographic, and acoustic aspects of the market squid, *Loligo opalescens* Berry. California Department of Fish and Game, Fish Bulletin 169:67-98.
- Reichow, D. and M.J. Smith. 1999. Highly variable microsatellites in the California market squid, *Loligo opalescens*. *Marine Biotechnology*. 1(4) 403-406.
- Reichow, D. and M.J. Smith. 2001. Microsatellites reveal high levels of gene flow among populations of California squid, *Loligo opalescens*. *Molecular Ecology*. 10(5) 1101-1109.
- Restrepo, V.R., Gabriel, W.L., Low, L.L., MacCall, A.D., Mace, P.M., Methot, R.D., Powers, J.E., Taylor, B.L., Thompson, G.G., Wade, P.R., and J.F. Witzig. 1998. Technical guidance on the use of precautionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. U.S. Dept. of Commerce, NOAA Technical Memorandum. 54 pp.
- Riser, N.W. 1949. Studies on the Tetracyllidae. Unpublished PhD. Thesis, Department of Biology, Stanford University.
- Roper, C.F.E. and M.J. Sweeney. 1984. Cephalopods of the world: An annotated and illustrated catalogue of species of interest to fisheries. *FAO Fisheries Synopses* 125(3): 277 pp.
- Sinclair EH. 1992. Stomach contents of four short-finned pilot whales (*Globicephala macrorhynchus*) from the Southern California Bight. *Marine Mammal Science* 8(1):76-81.
- Stewart, J.S., Hazen, E.L., Bograd, S.J., Byrnes, J.E., Foley, D.G., Gilly, W.F., Robison, B.H., and J.C. Field. 2014. Combined climate-and prey-mediated range expansion of Humboldt squid (*Dosidicus gigas*), a large marine predator in the California Current System. *Global Change Biology* 20(6):1832-1843.
- Spratt, J.D. 1978. Age and growth of the market squid, *Loligo opalescens* Berry, in Monterey Bay. California Department of Fish and Game, Fish Bulletin 169:35-44.

- Sydeman, W.J., Hobson, K.A., Pyle, P., and E.B. McLaren. 1997 Trophic relationships among seabirds: Combined stable isotope and conventional dietary approach. *The Condor* 99:327-336.
- Szoboszlai, A.I., Thayer, J.A., Wood, S.A., Sydeman, W.J., and L.E. Koehn. 2015. Forage species in predator diets: synthesis of data from the California Current. *Ecological Informatics* 29: 45-56.
- Vecchione M., Shea E., Bussarawit S., Anderson R., Alexeyev D., Lu C.-C., Okutani T., Roeleveld M., Chotiyaputta C., Roper C., Jorgensen E., and N. Sukramongkol. 2005. Systematics of Indo-West Pacific Loliginids. *Phuket Marine Biological Center Research Bulletin* 66:23-26.
- Vojkovich, M. 1998. The California fishery for market squid (*Loligo opalescens*). In *Symposium of the CalCOFI conference*. CalCOFI Reports. 39:55-60.
- Walthers, L.C. and G.E. Gillespie. 2002. A review of the biology of opal squid (*Loligo opalescens* Berry), and of selected Loliginid squid fisheries. *Canadian Science Advisory Secretariat*. 110 pp.
- Warner, R.R., Hamilton, S.L., Sheehy, M.S., Zeidberg, L.D., Brady, B.C., and J.E. Caselle. 2009. Geographic variation in natal and early larval trace-elemental signatures in the statoliths of the market squid *Doryteuthis* (formerly *Loligo*) *opalescens*. *Marine Ecology Progress Series*, 379:109-121.
- Weber, M.L. and B. Heneman. 2000. *Guide to California's Marine Life Management Act*. Bolinas, California: Common Knowledge Press. 133 pp.
- Yang, W.T., Hanlon, R.T., Krejci, M.E., Hixon, R.F., and W.H. Hulet. 1983. Laboratory rearing of *Loligo opalescens*, the market squid of California. *Aquaculture*, 31(1):77-88.
- Yang, W.T., Hixon, R.F., Turk, P.E., Krejci, M.E., Hulet, W.H., and R.T. Hanlon. 1986. Growth, behavior, and sexual maturation of the market squid, *Loligo opalescens*, cultured through the life cycle. *Fishery Bulletin* 84:771-798.
- Zeidberg, L.D. and W.M. Hamner. 2002. Distribution of squid paralarvae, *Loligo opalescens* (Cephalopoda: Myopsida), in the Southern California Bight in the three years following the 1997-1998 El Niño. *Marine Biology* 141:111-122.
- Zeidberg, L.D., Hamner, W., Moorehead, K., and E. Kristof. 2004. Egg masses of *Loligo opalescens* (Cephalopoda: Myopsida) in Monterey Bay, California

following the El Nino event of 1997–1998. *Bulletin of Marine Science* 74(1):129-141.

Zeidberg, L.D., Hamner, W.M., Nezlin, N.P., and A. Henry. 2006. The fishery for California (*Loligo opalescens*) (Cephalopoda: Myopsida), from 1981 through 2003. *Fishery Bulletin* 104(1):46-59.

Zeidberg, L.D., Isaac, G., Widmer, C.L., Neumeister, H., and W.F. Gilly. 2011a. Egg capsule hatch rate and incubation duration of the California market squid, *Doryteuthis (Loligo) opalescens*: insights from laboratory manipulations. *Marine Ecology* 32(4):468-79.

Zeidberg, L.D., Butler, J.L., Ramon, D., Cossio, A, Stierhoff, K.L., and A. Henry. 2011b. Estimation of spawning habitats of market squid (*Doryteuthis opalescens*) from field surveys of eggs off Central and Southern California. *Marine Ecology* 33(3):326-36.

Appendix A. Glossary of Terms and Abbreviations

A

Absolute Abundance - The total number of individuals in a population. This is rarely known, but usually estimated from relative abundance, although other methods may be used.

Abundance - See Relative Abundance or Absolute Abundance.

Acceptable Biological Catch (ABC) - A term used that refers to the range of allowable catch for a species or species group. It is set each year by a scientific group created by the management agency. The agency then takes the ABC estimate and sets the annual Total Allowable Catch (TAC).

Adaptive Management - In regard to a marine fishery, adaptive management is a scientific policy that seeks to improve management of biological resources, particularly in areas of scientific uncertainty, by viewing program actions as tools for learning. Actions are designed so that even if they fail, they will provide useful information for future actions. Monitoring and evaluation shall be emphasized so that the interaction of different elements within the system can be better understood.

Age Class - A group of individual organisms of the same age in a population. "Year-Class" or "cohort" are terms generally synonymous with age class, but are identified by the actual year in which the cohort was produced (e.g., 1991 year-class or sardines resulted from the 1991 spawning season).

Age Composition - Identifies the proportions of a population of fishes by age or age group.

Allocation - The opportunity to fish is distributed among user groups or individuals. The share that a user group receives is sometimes based on historic harvest amounts.

Assessment - A judgment made by a scientist or scientific body on the state of a resource (e.g., size, health, pollution impacts) usually for passing advice to management authority.

Availability - In a general sense, used to describe periods of poor (low availability) or good (high availability) catches, regardless of the size or health of a fish population. In a strict sense, it refers to the fraction of a population which is susceptible to fishing during a given fishing season.

B

Biomass - The total weight or numbers of a stock or population of fish at a given point in time. The **spawning biomass** is that portion of total biomass that is mature and spawning.

Brail net - A large dip net, sometimes used with the assistance of the vessel's hydraulics.

Bycatch - Fish or other marine life that are taken in a fishery but which are not the target of the fishery, including discards.

C

CalCOFI - California Cooperative Oceanic Fisheries Investigations.

Candidate Species - Officially noticed by the Commission as being under review by the Department of Fish and Game for addition to the rare, threatened, or endangered species lists.

Capacity Goal - The primary purpose of restricted access programs is to match the level of effort in a fishery to the health of the fishery resource, each restricted access program that is not based on individual transferable quotas shall identify a fishery capacity goal intended to promote resource sustainability and economic viability of the fishery.

Catch - Refers sometimes to the total amount (numbers or weight) caught, and sometimes only to the amount landed or kept. Catches that are not landed are called discards.

Catch Per Unit Effort (CPUE) - The catch obtained by a vessel, gear or fisherman per unit of fishing effort (e.g., number of fish caught per hour of trawling).

CCE - California Current Ecosystem.

CCIEA - California Current Integrated Ecosystem Assessment.

CCR - California Code of Regulations.

CDFG - California Department of Fish and Game.

CDFW - California Department of Fish and Wildlife.

CEQA - California Environmental Quality Act.

Cohort - A group of fish spawned during a given period, usually within a year.
See also: **age class**.

Commission - California Department of Fish and Game Commission.

Competition - Active demand between organisms for a common resource that is in limited supply (e.g., food, space).

CPFV - Commercial Passenger Fishing Vessel.

CPS - Coastal pelagic species (northern anchovy, jack mackerel, Pacific mackerel, Pacific sardine, and market squid).

CWPA - California Wetfish Producers Association.

D

Department - California Department of Fish and Wildlife.

Depressed - With regard to a marine fishery, the condition of a fishery for which best available scientific and other relevant information indicates a declining population trend has occurred over a period of time appropriate to that fishery. With regard to fisheries for which management is based on maximum sustainable yield, or in which a natural mortality rate is available, "depressed" means the condition of a fishery that exhibits declining fish population abundance levels below those consistent with maximum sustainable yield.

Discards - Fish that are taken in a fishery but are not retained because they are of an undesirable species, size, sex, or quality, or because they are required by law to be released.

DML - Dorsal Mantle Length.

Drum seine - Like a purse seine, but a large drum stores, deploys, and retrieves the net.

E

Ecosystem - The relationships between the sum total biological and non-biological factors present in the area.

EEZ - Exclusive economic zone; consists of ocean waters from the edge of State waters three miles (5 km) to 200 miles (322 km) offshore.

Effort - The amount of time and fishing power used to harvest fish. Fishing power includes gear size, boat size, and horsepower.

EFH - Essential Fish Habitat.

EFP - Experimental Fishery Permit.

Egg and Larval Surveys - Involves the collection of larvae, usually with a tow net, within a predefined geographic area. These surveys are typically carried out in conjunction with other studies in order to determine fishery information such as abundance and recruitment. They can also be used to define the geographic extent and peak time of spawning activity.

Egg Escapement Method - A management tool which may be used to determine whether the fleet is fishing above or below a predetermined sustainable level of exploitation. The method requires establishing a threshold value to ensure that an adequate number of eggs are deposited prior to harvest.

EIR - Environmental Impact Report.

El Niño - An El Niño event occurs when the sea surface temperatures in the eastern equatorial Pacific region along the coasts of Peru and Ecuador increase significantly above the average temperature for three or more months. A La Niña is characterized by unusually cold ocean temperatures in the equatorial Pacific. Currently, El Niños have a return period of four to five years. An El Niño Southern Oscillation (ENSO) describes the full range of the Southern Oscillation that includes both warming and cooling of sea surface temperatures when compared to a long-term average. The ENSO has two parts: the El Niño is the oceanic component and the Southern Oscillation is the atmospheric component of the phenomenon.

Empirical Dynamic Model (EDM) - Captures nonlinear dynamics and system drivers that haven't been measured by including lags (i.e., previous measurements of the same data stream at different time steps). EDMs can be used to make predictions based on patterns in long-term data such as environmental drivers and are unbiased by predetermined model equations. EDMs can work particularly well for short-lived species. Capability to forecast landings, tease out complex spatial and temporal dynamics, and highlight survey information of greatest value.

Endangered Species - A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more

causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

ENSO - El Niño Southern Oscillation. See El Niño.

Escapement - That part of the stock which survives at the end of a fishing period (e.g., season, year).

ESR - Enhanced Status Report.

Essential Fishery Information - Information about fish life history and habitat requirements; the status and trends of fish populations, fishing effort, and catch levels; fishery effects on fish age structure and on other living marine resources and users; and any other information related to the biology of a fish species or to taking in the fishery that is necessary to permit fisheries to be managed according to the requirements of §7060 FGC.

Ex-vessel - Refers to activities that occur when a commercial fishing boat lands or unloads a catch. For example, the price received by a captain for the catch is an ex- vessel price.

F

Fecundity - The production of eggs per individual or per unit weight of an individual.

FGC - Fish and Game Code.

Fishery- Both of the following:

- (a) One or more populations of marine fish or marine plants that may be treated as a unit for purposes of conservation and management and that are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics.
- (b) Fishing for, harvesting, or catching the populations described in (a).

Fishing Effort - The amount of effort expended by a gear or person which is usually standardized (e.g., number of net hauls per unit of time per size of net) and summed before being used as an index of total effort. Also see **Effort**.

Fishing Mortality (F) - A measurement of the rate of removal of fish from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time. The acceptable rates of fishing mortality may vary from species to species.

Fishing year or fishing season - The period April 1 through March 31 under the Market Squid FMP.

Fishery Control Rules - Specific management strategies such as seasonal catch limits, daily trip limits, area closures, time closures, and sustainable levels of egg escapement which provide for a sustainable market squid fishery.

FMP - Fishery Management Plan.

Forage - the role of market squid in the food chain as a critical source of food for higher predators, including birds, fish and marine mammals.

G

Growth Rate - Usually refers to the average growth of individuals, in length or weight by successive ages over the life span of the particular species.

GT - Gross Tonnage.

H

Habitat - The physical, chemical, and biological features of the environment where an organism lives.

Habitat Enhancement – The improvement of habitat, typically for the benefit of a select number of species which depend on that habitat. Wetlands restoration, artificial reefs, and kelp reforestation are examples of habitat enhancement.

Hook and Line - Includes trolling, jigging, and longline gear types.

I

Incidental Catch - See **Bycatch Incidentally-Taken Species** - See **Bycatch**.

Indices of Abundance - These measures usually do not translate to an estimate of actual biomass of a population and are usually collected over time (years) to reflect trends in a population. The indices can be compiled from a number of sources, usually reported annually (e.g., CPUE, aerial spotter, and acoustic, egg, larval, or adult research survey data). Indices of abundance, because of their simplicity, are seriously evaluated regarding the assumptions in their calculation. When they can be closely matched to

more direct and precise of estimates of abundance, they can be cost-effective tools of tracking the trends of a population.

J K L

Lampara net – A round haul net with the sections of netting made and joined to create bagging. The net is pushed beneath squid to encircle it from each side. The “wings” of the net are pulled back to the boat and the squid end up in the bag portion of the net. This gear has no arrangement for pursing.

La Niña - A La Niña is characterized by unusually cold ocean temperatures in the equatorial Pacific. See El Niño.

Landings - The number or weights of fish unloaded at a dock by commercial fishermen or brought to shore by recreational fishermen for personal use. Landings are reported at the points at which fish are brought to shore. Note that landings, catch, and harvest define different things.

Light boat - a vessel engaged in the commercial taking or attempting to take market squid which uses bright lights to aggregate squid for commercial purposes including live bait.

Limited Entry - Restriction of the right to participate in a fishery, by the use of permits or other means.

Living Marine Resources - Includes all wild mammals, birds, reptiles, fish, and plants that normally occur in or are associated with salt water, and the marine habitats upon which these animals and plants depend for their continued viability.

M

Marine Mammals - Animals that live in marine waters and breathe air directly. Females give live birth and can produce milk. Includes porpoises, whales, and seals.

Maximum Sustainable Yield - In a marine fishery, it means the highest average yield over time that does not result in a continuing reduction in stock abundance, taking into account fluctuations in abundance and environmental variability.

Mesh Size - The size of openings in a fishing net. Minimum mesh sizes are often prescribed in an attempt to avoid the capture of young fish before they reach their optimal size for capture.

MLDS – California Department of Fish and Wildlife's Marine Landings Database System, used to manage all commercial fishing landings information.

MLMA - Marine Life Management Act.

MLPA - Marine Life Protection Act.

MPA - Marine Protected Area.

Mortality (Total) - The sum total of individual deaths within a population. Usually stated as an annual rate and calculated as the sum of deaths due to natural causes (e.g., predation, disease), fishing mortality (deaths due to fishing and natural mortality), and non-fishing, artificial causes (e.g., pollution, seismic surveys).

MSFCMA - Magnuson-Stevens Fishery Conservation and Management Act.

MSFMP – Original Market Squid Fisheries Management Plan as adopted by the Commission in 2004 and implemented in 2005.

MSFMP A-1 – Amended Market Squid Fisheries Management Plan as adopted by the Commission in 2025.

N

NOAA - National Oceanic and Atmospheric Administration.

NOP - Notice of Preparation.

NMFS - National Marine Fisheries Service or NOAA Fisheries.

O

Optimum Yield - With regard to a marine fishery, means the amount of fish taken in a fishery that does all of the following:

- (a) Provides the greatest overall benefit to the people of California, particularly with respect to food production and recreational opportunities, and takes into account the protection of marine ecosystems.
- (b) Is the maximum sustainable yield of the fishery, as reduced by relevant economic, social, or ecological factors.
- (c) In the case of an overfished fishery, provides for rebuilding to a level consistent with producing maximum sustainable yield in the fishery.

Overfished - With regard to a marine fishery, means both of the following:

- (a) A depressed fishery.
- (b) A reduction of take in the fishery is the principal means for rebuilding the population.

Overfishing - A rate or level of taking that the best available scientific information, and other relevant information that the Commission or Department possesses or receives, indicates is not sustainable or that jeopardizes the capacity of a marine fishery to produce the maximum sustainable yield on a continuing basis.

P

Paralarvae – Life stage of market squid at the time of hatching (hatchlings).

Participants - The recreational fishing, commercial fishing, and fish receiving and processing sectors of the fishery.

Pelagic - Pertaining to the water column, or referring to organisms living in the water column.

PPMC - Pacific Fishery Management Council.

Population (see **Stock**) - A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Predator - A species that feeds on other species. The species being eaten is the prey.

Prey - A species being fed upon by other species. The species eating the other is the predator.

Productivity - Generally used to refer to the capacity of a stock to provide a yield.

PSMFC - Pacific States Marine Fisheries Commission.

Purse Seine - A net used to encircle aggregations of fish by closing the bottom of the net. The net is continuous, with corks along the top and leads and rib line along the bottom. Purse seines have a drawstring running the length of the rib line, which is pulled tight after the set.

Q

Quota - A limit on the amount of fish which may be landed in any one fishing season or year. May apply to the total fishery or to an individual share.

R

Recreational Fishery - Harvesting fish for personal use, fun, and challenge. Recreational fishing does not permit sale of catch. Refers to and includes the fishery resources, fishermen, and businesses providing needed goods and services.

Recruit - A relatively young fish entering the exploitable stage of its life cycle.

Recruitment - Either the rate of entry of recruits into the fishery or the process by which such recruits are generated. Usually associated with attainment of a particular age or size, but can also be dependent on such factors as the fishes' appearance on a particular fishing ground, or how they grow to a size large enough to be captured by a certain mesh gear.

Relative Abundance - An estimate of biomass usually measured by indices that track trends in population biomass over time. This method is neither a direct nor usually precise estimate.

Restricted Access - A fishery in which the number of persons who may participate, the number of vessels that may be used in taking a specified species of fish, or the catch allocated to each fishery participant is limited by statute or regulation.

Rib line – A modification to a seine net which adds additional webbing between the weighted headline and the purse line. This causes the net to flutter or bounce when it does contact the bottom as opposed to dragging. The rib line is intended to reduce the likelihood of pursing benthic bycatch, and to reduce the impact on the sandy bottom habitat, while simultaneously strengthening the integrity of and preventing damages to the net.

Round Haul - those that employ the use of lampara, purse seine, and drum seine net gear to commercially harvest squid.

S

SAFE - Stock Assessment and Fishery Evaluation.

SB - Senate Bill.

Seasonal Catch Limit - an amount of allowable catch which may be taken within a designated geographic area in a fishing season, specified in short tons and excluding discard mortality. The attainment (or expected attainment) of this limit will cause closure of the directed commercial fishery as specified in regulation.

Selectivity - Refers to the selective nature of fishing gear in that almost all kinds of gear catch fish of some sizes more readily than other sizes.

SCB - Southern California Bight.

SFAC - Squid Fishery Advisory Committee.

SMR - State Marine Reserve.

Spawning Biomass - See Biomass.

Spermatophore - A capsule or compact mass of spermatozoa extruded by the males of certain invertebrates and directly transferred to the reproductive parts of the female.

SRSC - Squid Research and Scientific Committee.

SST - Sea surface temperature.

Stock - A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Sustainable, Sustainable Use, and Sustainability - with regard to a marine fishery, both of the following:

- (a) Continuous replacement of resources, taking into account fluctuations in abundance and environmental variability.
- (b) Securing the fullest possible range of present and long-term economic, social, and ecological benefits; maintaining biological diversity; and, in the case of fishery management based on maximum sustainable yield, taking in a fishery that does not exceed optimum yield.

SWFSC - Southwest Fisheries Science Center.

T

Threatened Species - a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts.

Total Allowable Catch (TAC) - The annual recommended catch for a species or species group. The regional council sets the TAC from the range of the Allowable Biological Catch (ABC).

Total Length - The straight-line distance from the most forward tip of the snout to the end of the tail fin, when the mouth is closed and the lobes of the tail fin are squeezed together.

Trawl - A large bag net that is tapered and forms a flattened cone. The mouth of the net is kept open while it is towed or dragged over the sea bottom.

Trophic Level - Position in the food chain, determined by the number of energy- transfer steps to that level.

U

U.S. – United States of America.

USC - United States Code.

V W

Weekend Closure - a routine management measure which may be used to prohibit take of market squid during certain days of a week.

X Y Z

Year Class - see Age Class.

Yield - Sometimes this term is synonymous with catch, but it more often implies a degree of sustainability over a number of years.

FINAL MARKET SQUID FISHERY MANAGEMENT PLAN



Mark Conlin Photography



01 April 2005



STATE OF CALIFORNIA
RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME
MARINE REGION



California Department of Fish and Game Marine Region Offices

Belmont Field Office and Laboratory Contact: Connie Ryan 350 Harbor Blvd. Belmont, CA 94002 Public Information: (650) 631-7730 FAX: (650) 631-6793	Los Alamitos Field Office and Laboratory Contact: Valerie Taylor 4665 Lampson Ave., Suite C Los Alamitos, CA 90720 Public Information: (562) 342-7100 FAX: (562) 342-7139
Bodega Bay Field Office Contact : Tom Moore 1850 Bay Flat Road P.O. Box 1560 Bodega Bay, CA 94923 (707) 875-4260 FAX: (707) 875-4269	Monterey Field Office and Laboratory Contact: Travis Tanaka 20 Lower Ragsdale Drive, Suite 100 Monterey, CA 93940 Public Information: (831) 649-2870 FAX: (831) 649-2894
Eureka Field Office and Laboratory Contact: Mike Prall 619 2 nd Street Eureka, CA 93940 Public Information: (707) 445-6493 FAX: (707) 445-6664	Morro Bay Field Office and Laboratory Contact: Christine Pattison 213 Beach Street Morro Bay, CA 93442 Public Information: (805) 772-3011 FAX: (805) 772-7569
Fort Bragg Field Office and Laboratory Contact: Lucy Johnson 19160 South Harbor Drive Fort Bragg, CA 95437 Public Information: (707) 964-9078 FAX: (707) 964-0642	San Diego Field Office and Laboratory Contact: Bob Read 4949 Viewridge Avenue San Diego, CA 92123 Public Information: (858) 467-4213 FAX: (858) 467-4299
La Jolla Field Office and Laboratory Contact: Dale Sweetnam 8604 La Jolla Shores Drive La Jolla, CA 92037 Public Information: (858) 546-7170 FAX: (858) 546-5644	Santa Barbara Field Office and Laboratory Contact: Briana Brady 1933 Cliff Dr., Suite 9 Santa Barbara, CA 93109 Public Information: (805) 568-1220 FAX: (805) 568-1235

Availability

The Final Market Squid Fishery Management Plan is available for reference beginning 1 April 2005 at the CDFG offices listed above. To comply with California's Paper Reduction Act, a CD-ROM of the MSFMP, with Appendices, will be at each office. Copies may be requested by contacting Bob Read, (858) 467-4213, RRead@dfg.ca.gov. Copies are available on CD-ROM, in Braille, in large print, on the computer (via the Web), and on audio cassette. To request a copy in an alternative format, please contact Bob Read (contact information above). The Final MSFMP is also available at <http://www.dfg.ca.gov/mrd/marketsquid/index.html>.



Market Squid Fishery Management Plan Table of Contents

Executive Summary	i
Fishery Control Rules	ii
Restricted Access Program	ii
Ecological Concerns	iii
Administrative Items	iii
Table of Contents	iv
List of Tables	xi
List of Figures	xiii
Chapter 1. Introduction	1
1.1 Purpose and Need for Action	1
1.1.1 Problem Statement	1
1.1.2 Location and General Characteristics of the Project Area	3
1.1.3 The Marine Life Management Act	3
1.1.4 Specific Goals and Objectives of the Market Squid Fishery	5
1.1.5 Constituent Involvement	6
1.1.6 Summary of Goals and Objectives	7
1.2 The Structure of the Market Squid Fishery Management Process under the Marine Life Management Act	9
1.2.1 Process of Plan Review	9
1.2.2 Types of Framework Actions	10
1.2.2.1 FMP Amendment	10



1.2.2.2 Full Rulemaking Actions	10
1.2.2.3 Notice Actions.....	11
1.2.2.4 Prescribed Actions	11
1.2.2.5 Review of Management Measures	12
1.3 Authority and Responsibility	13
1.3.1 California Environmental Quality Act (CEQA).....	13
1.3.1.1 Functional Equivalent.....	14
1.3.1.2 MSFMP Environmental Document.....	15
1.3.1.3 Federal Law	15
1.4 State Management of Market Squid	15
1.4.1 Legislative Responsibilities.....	16
1.4.2 Commission and Department Responsibilities.....	16
1.4.3 Commercial Fisheries	16
1.4.4 Rulemaking Process under the Administrative Procedures Act (APA)	16
Chapter 2. Background: A Description of the Species, the Fishery, and Social and Economic Components of the Market Squid Fishery	18
2.1 Species Description.....	18
2.1.1 Distribution, Stock Biomass, Genetic Stock Structure and Migration.....	18
2.1.2 Age and Growth.....	19
2.1.3 Reproduction, Seasonality and Fecundity	21
2.1.4 Natural Mortality.....	22
2.1.5 Disease.....	22
2.1.6 Predator/Prey Relationships	23



2.1.6.1 Squid as Predators.....	23
2.1.6.2 Squid as Forage.....	23
2.1.7 Competition.....	28
2.1.8 Critical Habitat	29
2.1.9 Status of the Stocks.....	30
2.1.10 Areas Involved.....	30
2.2 History of Exploitation.....	30
2.2.1 Description of User Groups	32
2.2.1.1 Commercial Fishery	32
2.2.1.2 Recreational Fishery	37
2.2.2 Fishing Effort.....	37
2.2.2.1 Commercial Fishing Effort.....	37
2.2.2.2 Recreational Fishing Effort.....	40
2.2.3 Fishery Impacts	40
2.3 Social and Economic Characteristics of the Market Squid Fishery.....	43
2.3.1 Demographic and Social Communities Associated with the Market Squid Fishery.....	48
2.3.1.1 Northern Fishery	48
2.3.1.2 Southern Fishery - Ventura and Port Hueneme	50
2.3.1.3 Southern Fishery - San Pedro/ Terminal Island	52
2.3.1.4 Summary of the Three Squid Fishery Areas	53
2.4 History of Conservation and Management Measures.....	53
2.4.1 State Management	53



2.4.2 Federal Management: Coast Pelagic Species Fishery Management Plan (CPS FMP).....	56
Chapter 3. Management Measures for a Sustainable Market Squid Fishery	57
3.1 Project Objectives	57
3.1.1 Fishery Control Rules	57
3.1.2 Restricted Access Program	58
3.1.3 Ecological Considerations	58
3.1.4 Administrative Items	58
3.2 Fishery Control Rules	60
3.2.1 Definition of Maximum Sustainable Yield and Optimum Yield	60
3.2.2 Proxy for MSY and Precautionary OY	61
3.2.3 Seasonal Catch Limitation	62
3.2.3.1 A Proxy for MSY Based on Historical Landings	62
3.2.3.2 Establishment of a Seasonal Catch Limitation	62
3.2.3.3 The Use of Egg Escapement as a Proxy for MSY.....	63
3.2.4 Weekend Closure for Commercial Market Squid Fishery	64
3.2.5 Monitoring Programs	64
3.2.6 Live Bait Fishery and Incidental Catch of Market Squid.....	64
3.2.7 Gear Restrictions	65
3.3 Restricted Access Program (Limited Entry Program).....	65
3.3.1 Summary of Commission Restricted Access Policy.....	66
3.3.2 Capacity Goal	67
3.3.3 Initial Issuance of Market Squid Fleet Permits	68



3.3.4 Permit Fees	70
3.3.6. Transferability of Market Squid Brail Permits	72
3.3.7 Transferability of Market Squid Light Boat Owner's Permits	72
3.3.8 Permit Transfer Fees	73
3.3.9 Experimental Market Squid Vessel Permits	73
3.4 Ecological Considerations	73
3.5 Administrative Items	75
3.5.1 Advisory Committee for Squid Fishery	75
Chapter 4. Research to Support the Market	76
4.1 Grouping Essential Fishery Information	76
4.1.1 Age and Growth Characteristics	77
4.1.2 Distribution of Stocks	77
4.1.3 Ecological Interactions	77
4.1.4 Estimates of Abundance	78
4.1.5 Movement Patterns	78
4.1.6 Recruitment	78
4.1.7 Reproductive Characteristics	78
4.1.8 Total Mortality	79
4.1.9 Market Squid Social and Economic Factors	79
4.1.9.1 Employment	79
4.1.9.2 Expenditures	79
4.1.9.3 Market Demand	80
4.1.9.4 Revenue	80



4.2 Past and Ongoing Monitoring of the Commercial Fishery	81
4.2.1 Sustainable Fishery Control Rules.....	81
4.2.2 Fishery-Dependent Monitoring.....	81
4.2.2.2 Problems with Past and Ongoing Fishery-Dependent Monitoring	81
4.2.3 Fishery-Independent Research.....	82
4.2.3.1 Past Fishery-Independent Research	82
4.2.3.2 Problems with Past and Ongoing Fishery-Independent Research	82
4.3 Current Knowledge of Essential Fishery Information.....	83
4.3.1 Age and Growth Characteristics	83
4.3.2 Distribution of Stocks	83
4.3.3 Ecological Interactions.....	83
4.3.4 Estimates of Abundance	83
4.3.5 Movement Patterns.....	83
4.3.6 Recruitment	83
4.3.7 Reproductive Characteristics	84
4.3.8 Total Mortality	84
4.3.9 Social and Economic	84
4.4 Research Needed to Obtain Essential Fishery Information.....	84
4.4.1 Fishery-Dependent Data Research	85
4.4.2 Fishery-Independent Data Research	85
4.4.3 Market Squid Fishery Sponsored Research	86
4.4.4 Steps to Monitor the Fishery and Obtain Essential Fishery Information	86
4.4.5 Social and Economic Dimensions of the Fishery	87



Chapter 5. Implementation and Costs	88
5.1 Enforcement	88
5.2 Ongoing Management and Research.....	89
5.2.1 Fishery-Dependent Monitoring.....	90
5.2.2 Fishery-Independent Research.....	91
5.3 Summary of Estimated Annual Costs of Implementation	91
Literature Cited.....	93
Personal Communications	102
Appendix A Glossary.....	103
Appendix B Existing Regulations Prior to Adoption (FGC and CCR Title 14).....	116
FISH AND GAME CODE	117
CALIFORNIA CODE OF REGULATIONS	123



Market Squid Fishery Management Plan List of Tables

Table 1-1. Contribution of management measures to ecological goals and objectives of the Marine Life Management Act and the MSFMP	8
Table 2-1. Known fish, bird, mammal and invertebrate predators of coastal pelagic species, including market squid	27
Table 2-2. Historical market squid landings in tons for California	30
Table 2-3. Description of gear types.....	33
Table 2-4. Historical California landing receipt information for permitted and non-permitted vessels, 1981-1982 to 2002-2003 seasons.....	36
Table 2-5. Vessel and light boat permit issuance, 1998-99 to 2000-01 seasons.	39
Table 2-6. Percent frequency of occurrence of observed market squid incidental catch by port area.	41
Table 2-7. Market squid volume and value exported and respective rankings for 1990 through 2000 (last year data available).	43
Table 2-8. Market squid landings (in tons) by port area	44
Table 2-9. Dollars paid ex-vessel for market squid by port area	44
Table 2-10. Dollars paid ex-vessel by gear type for market squid fishery from 1981-1982 to 2001-2002 seasons.....	46
Table 2-11. Percent of revenue received by port area complex from 1981-1982 through 2001-2002 fishing seasons.	47
Table 2-13 Summary of market squid regulations from 1959 to the present.	55
Table 3-1. Summary of Market Squid FMP adopted options.....	58



Table 3-2. Market squid landings by season and average landings	63
Table 3-3. Summary of proposed project initial issuance limited entry criteria	69
Table 3-4. Range of fees for transferable and non-transferable market squid vessel, brail and light boat owner permits	72
Table 3-5 Seabird species that breed in the Channel Islands and the Farallon Islands	74



Market Squid Fishery Management Plan List of Figures

Figure 2-1. Number of market squid by age from port samples by sex.	21
Figure 2-2. Food web for market squid, <i>Loligo opalescens</i>	24
Figure 2-3. Seasonal comparison of sea lion scat squid frequency of occurrence at San Clemente (SCI) and San Nicholas Islands (SNI) vs Squid landings in Southern California Ports.....	26
Figure 2-4. Expanding symbol plots of distribution and abundance of <i>Loligo opalescens</i> juveniles collected as part of the by-catch in the summer triennial groundfish survey	27
Figure 2-5. Number of vessels and market squid landings by season for Northern California.....	34
Figure 2-6. Number of vessels and market squid landings by season for Southern California.....	35
Figure 2-7. Percent of landings by season and gear type	36
Figure 2-8. Average monthly landings in tons for the squid fishery divided at Point Conception into northern (left axis) and southern (right axis) fisheries for the period of 1981 through 2001.	38
Figure 2-9. Market squid landings from 1927/1928 through 2000/2001 seasons showing the increase in landings for the fishery south of Point Conception.....	39
Figure 2-10. Dollars paid ex-vessel and landings in tons for the 1981-1982 through 2001-2002 seasons.....	46



Figure 2-11. Geographic location of major fishing areas by CDFG blocks from 1991
through 2000 based on Department landing receipts..... 49



Appendices

Appendix A. Glossary of Terms and Abbreviations	104
Appendix B. Existing Regulations Prior to Adoption of the MSFMP	117



Executive Summary

The Final Market Squid Fishery Management Plan (MSFMP) is presented in four sections. Section 1 presents background on the California market squid fishery as well as the MSFMP Project. Section 2 includes the environmental documentation (see California Code of Regulations Title 14 §15250-15253). This includes a review of alternatives and options presented to the Fish and Game Commission (Commission) during the adoption process. The environmental document was certified by the Commission as meeting California Environmental Quality Act (CEQA) requirements at its 27 August 2004 meeting. Section 3 includes the regulations that will implement the MSFMP Project's management strategy. Section 4 includes public comments and Fish and Game Department (Department) responses received during the adoption process.

~~The market squid~~The Amended Market Squid Fishery Management Plan (MSFMP A-1) is presented in five chapters. Chapter 1 describes the plan's purpose, need, and consistency with the Marine Life Management Act (MLMA). Chapter 2 describes the species and fishery. Chapter 3 provides the framework for management, including control rules, and limits on fishing and the fishery. Chapter 4 includes the scientific basis for management as well as ongoing and planned research to support management. Chapter 5 provides information on anticipated future needs to ensure the fishery remains sustainable.

The market squid (*Doryteuthis (Loligo) opalescens*) fishery is one of the most important in the State of California in terms of total landings and revenue. The fishery generates tens of millions of dollars to the state annually from domestic and foreign sales. In addition to supporting the commercial fishery, the market squid resource is an important forage item for seabirds, marine mammals, and other fish taken for commercial and recreational purposes. - #Market squid is also used by the recreational fishery as bait.

In 1997, the Legislature approved Senate Bill (SB) 364 (Sher), Chapter 785, Statutes of 1997, which established a moratorium on new vessels entering California's commercial market squid fishery. The initial three-year moratorium placed a cap on the number of vessels in the squid fishery, established a \$2,500 permit fee to fund a California Department of Fish and Wildlife (Department) study of the fishery, and provided the Fish and Game Commission (Commission) with interim regulatory authority over the fishery for the duration of the moratorium. As part of ~~this process~~SB 364, a Squid Fishery Advisory Committee, made up of resource stakeholders, and a Squid

Research Scientific Committee, consisting of many of the world's leading squid fishery scientists, were established to advise the Director of the Department (Director) on recommendations for squid conservation and management and to provide input on the development of research protocols.

In 2001, the Legislature approved SB 209 (Sher), Chapter 318, Statutes of 2001, which established permanent management authority of the market squid fishery to the Commission. The statutes also require the Commission to manage the squid fishery under the guidelines set forth by the Marine Life Management Act (MLMA). MLMA.

The goals of the MSFMP A-1 are to manage the market squid resource to ensure long-term resource conservation and sustainability, and to develop/maintain a framework for management that will be/is responsive to environmental and socioeconomic changes. The MSFMP A-1 establishes the management program for California's market squid fishery and procedures by which the Commission will manage/manages the market squid resource.

Market squid fishery management, as described in Chapter 3, is based on four management components: 1) fishery control rules, 2) a restricted access program, 3) environmental considerations including a seasonal closure area for seabirds and 4) administrative items. The final project and the implementing regulations adopted by the Commission at the 27 August 2004 and 3 December 2004 meetings include: The management components in the original Market Squid Fishery Management Plan (MSFMP), adopted by the Commission in 2004 and implemented in 2005, are amended here, following a review conducted by a Squid Fishery Advisory Committee (SFAC) convened by the Department in 2023 to 2024. These amendments are intended to ensure the continued sustainability of this fishery into the future.

The MSFMP A-1 includes the following management components, implemented through Commission regulations where necessary. Changes to management components from the original MSFMP are shown parenthetically in **bold**:

Fishery Control Rules

- Establish ~~a~~ seasonal catch limitation of 118,000 tons; **(unchanged)**:
- ~~Continue existing~~ Full fishery closures from ~~noon~~ 0700 Friday to noon Sunday from the U.S.- Mexico border to the California-Oregon border; and from 0700 Friday to midnight Sunday between a line due west from Point Lobos (36° 31.461' North Latitude) and a line due west from Pigeon Point (37 ° 11.000' North Latitude) **(originally noon Friday to noon Sunday statewide)**:

- ~~Continue existing squid~~ Squid fishery monitoring programs (~~port sampling biological monitoring~~ and logbooks); **unchanged**;
- ~~Continue existing regulations that~~ Regulations that require possession of a valid market squid fishery permit to take squid commercially but do not require a squid permit when fishing for live bait or incidental take of two tons or less; **unchanged**;
- ~~Maintain existing~~ Squid lighting wattage ~~requirements limits~~ (maximum of 30,000 watts) and ~~modify~~ shielding requirements regulations that require the lower edges of the lighting shields ~~shall~~ be parallel to the deck of the vessel; **unchanged**;
- A requirement that all round haul nets used to take market squid or onboard vessels taking or possessing market squid have a soft (non-metallic) rib line and rope used to purse the net to reduce the potential for bottom contact **(new requirements, not previously included)**.

Restricted Access Program

- ~~Establish a~~ A vessel-based capacity goal for the market squid fishery that produces a moderately productive and specialized fleet (55 vessels and 34 light boats, 18 brail vessels); **unchanged**;
- ~~Initial Issuance of Permits:~~
 - ~~Transferable vessel permits – possession of a current market squid vessel permit (2004-2005) and a minimum of 50 landings in a window period (January 1, 2000 through March 31, 2003);~~
 - ~~Transferable brail permits – possession of a current market squid vessel permit (2004-2005) and a minimum of 10 landings made with brail gear in a window period (January 1, 2000 through March 31, 2003);~~
 - ~~Transferable light boat permits – possession of a current market squid permit (either vessel or light for 2004-2005) and have submitted one light boat log by December 31, 2000;~~
 - ~~Non-transferable vessel permits – possession of a current market squid vessel permit (2004-2005), possessed a California commercial fishing license for at least 20 years and made a minimum of 33 squid landings at any time prior to August 27, 2004;~~
 - ~~Non-transferable brail permits – possession of a current market squid vessel permit (2004-2005), possessed a California commercial fishing license for at least 20 years and made a minimum of 10 landings with brail gear during one fishing season in a window period (January 1, 2000 through March 31, 2003);~~
 - Establish annual Annual permit fees at: starting at (and adjusted annually for inflation, **unchanged**):
 - Transferable Market Squid Vessel Permit: \$2000;
 - Non-transferable Market Squid Vessel Permit: \$1000;

- Transferable Market Squid Brail Permit: \$2000;
- Non-transferable Market Squid Brail Permit: \$1000;
- Transferable Light Boat Permit: \$600;
- ~~Establish full~~Full transferability of ~~market squid vessel permits~~Market Squid Vessel Permits based on comparable capacity (within 10%); establish transferability of ~~market squid vessel permits~~Market Squid Vessel Permits to a vessel of larger capacity under a “2 for 1” permit retirement;— **(unchanged)**;
- ~~Establish full~~Full transferability of ~~market squid brail permits~~Market Squid Brail Permits based on comparable capacity; **(unchanged)**;
- ~~Establish full~~Full transferability of ~~light boat permits~~Market Squid Light Boat Permits and establish an upgrade from a ~~light boat permit~~Market Squid Light Boat Permit to a ~~transferable brail permit~~Transferable Market Squid Brail Permit on a “1 for 1” permit retirement;
- ~~Set the~~An initial transfer fee at \$500, and an upgrade fee of \$1500;— **(unchanged)**;
- ~~Establish 3 experimental non-transferable market squid vessel permits;~~

Acknowledgements

~~Hunter, John, Ph. D~~

~~Sydeman, William, Ph. D~~

~~Thomson, Cindy, Ph. D~~

Squid Fishery Advisory Committee (SFAC) Members:

The Department would like to thank the members of the Squid Fishery Advisory Committee who helped with the ~~MSFMP. Participants on the committee were:~~ 2024 review of market squid fishery management, regulations and science.

~~Domeier, Michael, Ph. D (Chair)~~

2024 Squid Fishery Advisory Committee Members:

Allen Akselrud, Caitlin

Ashley, Richie

Augello, Ryan

Barry~~Amoreso, Orlando~~

Berman, John

Bates, Ken*

Cappuccio, Joe~~Brockman, Donald~~

Crabbe, David

Fina, Mark

Galipeau, Russell

Hanson, Corbin

Helms, Greg

McHenry, Porter

Noto, Tom

Susi-Blair, Brian

Towsley, Ken*

Villareal, Joe

Vuoso, Anthony

Weinstein, Anna*

Yoakum, Dan

* These members did not complete the Advisory Committee meeting process.

Contributors to the original 2005 MSFMP process

Squid Research Scientific Committee Members:

Brodziak, Jon, Ph.D.
desClers, Sophie, Ph.D.
Gilly, William, Ph.D.
Hatfield, Emma, Ph.D.
Hamner, William, Ph.D.
Hunter, John, Ph.D.
Sydeman, William, Ph.D.
Thomson, Cindy, Ph.D.

Squid Fishery Advisory Committee Members (2005):

Domeier, Michael, Ph.D. (Chair)
Amoroso, Orlando
Borman, John
Brockman, Donald
Crabbe, David
Deweese, Christopher, Ph.D.
Garrison, Karen
Genovese, Eddie
Jerkovich, Nick
Nobusada, Warren
Smith, Allen
Strasser, Paul

MSFMP 2000-2004 Contributors:

The MSFMP ~~has been~~was in analysis and design phases ~~since beginning in~~ January 2001. The efforts of many ~~CDFG~~Department staff members, ~~(note, in 2005 the Department was California Department of Fish and Game [CDFG]),~~ National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) researchers, University researchers, and fishermen ~~have~~ contributed to the ~~final~~2005 document. The Department acknowledges the concerted work of ~~the all of these people, individuals who contributed to the development of the MSFMP.~~ For a listing of ~~these~~ contributors, please refer to the Draft MSFMP dated 12 April 2004.

MSFMP Lead Authors and Editors:

The ~~Final~~2005 MSFMP ~~is~~was the result of revisions to a preliminary draft, which was released for public review in May 2002. It also went through an extensive peer review process. Based on these reviews, substantial improvements were made to the 2003 and the revised 2004 MSFMP. The core staff of authors and editors committed to these documents ~~includes~~included:

Henry, Annette. Survey Coordinator, NOAA Fisheries ~~-- Southwest Fisheries Science Center (SWFSC),~~ La Jolla, CA (formerly Biologist, CDFG, La Jolla, CA)
Lazar, Katherine. Scientific Aid. CDFG. La Jolla, CA

Chan, Corey. Scientific Aid. CDFG. La Jolla, CA
McDaniel, Jenny. Fisheries Biologist. NOAA Fisheries - SWFSC. (formerly
Scientific Aid. CDFG. La Jolla, CA)
Fluharty, Marilyn. Environmental Scientist. CDFG. San Diego, CA
Rojek, Nora. Fish and Wildlife Biologist, U.S. ~~FWS~~Fish and Wildlife Service,
Fairbanks, AK (formerly Environmental Scientist, CDFG, Monterey, CA)
Johnston, Deborah. Supervisory Biologist, Department of Defense, Tacoma,
WA (formerly Environmental Scientist, CDFG, Monterey, CA)
Hill, Kevin, Ph.D. Fisheries Biologist, NOAA Fisheries - SWFSC, La Jolla, CA
(formerly Senior Biologist, Specialist. CDFG. La Jolla, CA)
Yaremko, Marci. Senior Biologist, Specialist. CDFG. Santa Barbara, CA
Kong, Corey. Biologist. CDFG. Los Alamitos, CA
Taylor, Valerie. Biologist. CDFG. Los Alamitos, CA
Tanaka, Travis. Biologist. CDFG. Monterey, CA
Read, Robert. Associate Biologist. CDFG. San Diego, CA
Tillman, Terry. Senior Biologist, Specialist. CDFG. Sacramento, CA
Dale Sweetnam. Senior Biologist, Supervisor. CDFG. La Jolla, CA

The Peer Review Panel – Preliminary Draft MSFMP

Peer Review is the process of convening a panel of ~~scientists~~external experts to review any proposed Fishery Management Plan. The MSFMP Peer Review Panel ~~analyzes~~analyzed the strengths and ~~weakness~~weaknesses of the FMP and ~~recommends~~recommended strategies that ~~will guide~~guided and ~~secure~~secured a scientific basis for management. Under the guidance of Drs. William Leet and Christopher Dewees of the University of California, Davis, a Peer Review Panel of scientists was established to review the preliminary draft MSFMP. The Department would like to thank the contributions of the peer reviewers:

Hackett, Steven, Ph.D. School of Business Economics. Humboldt State
University. Arcata, CA
Hatfield, Emma, Ph.D. Fisheries Research Services Marine Laboratory,
Aberdeen, Scotland
Hochberg, F. G. "Eric", Ph.D. Department of Invertebrate Zoology, Santa
Barbara Museum of Natural History. Santa Barbara, CA
~~Museum of Natural History. Santa Barbara, CA~~ Melvin, Ed, Ph.D. School of
Fisheries Sciences. University of Washington. Seattle, WA
Pomeroy, Carolyn, Ph.D. Institute of Marine Sciences, University of California at
Santa Cruz. Santa Cruz, CA

Chapter 1. Introduction

Market squid (*Doryteuthis (Loligo) opalescens*) is the state's largest fishery by tonnage and often economic value. In addition to supporting ~~this important~~the commercial fishery, the market squid resource is important to the recreational fishery as bait and is forage for fishes, marine mammals, birds, and other marine life. ~~The growing in the 1990s, the~~ international market for squid and declining squid production from other parts of the world ~~has resulted in an~~ increased demand for California market squid. ~~That demand and~~ resulted in rapid growth in the number of vessels harvesting squid and the ~~amount~~volume of squid harvested. ~~In order to~~To provide for a sustainable fishery and protect against resource damage and ecological effects, the Legislature deemed it necessary to adopt and implement fishery management ~~that sustains both~~to sustain the squid population and the marine life ~~that depends~~dependent on squid.

The following sections discuss the purpose and need for management action in the commercial market squid fishery, describe the goals and objectives of the Marine Life Management Act (MLMA) and other relevant law, and identify management objectives specific to the market squid fishery management plan (MSFMP). A description of regulatory authorities and responsibilities that ~~will~~ support ~~these~~management objectives completes ~~this~~the chapter.

1.1. Purpose and Need for Action

1.1.1. Problem Statement

Commercial landings of market squid in California increased almost 400% from the 1990-1991 to the 1997-1998 season. The squid fishing season runs from 1 April through 31 March the following year. Concern over the rapid increase in squid harvest and new vessels entering the fishery from other states led to industry sponsored legislation in 1997. ~~This legislation, Senate Bill (SB) 364 (Sher),~~ was incorporated into Fish and Game Code (FGC) §8420-8429.7 which identified the problem as follows:

- (a) ~~(a)~~ The Legislature finds and declares that the fishery for market squid (*Loligo opalescens*) is the state's largest fishery by volume, generating millions of dollars of income to the state annually from domestic and foreign sales. In addition to supporting an



important commercial fishery, the market squid resource is important to the recreational fishery and is forage for other fish taken for commercial and recreational purposes, as well as for marine mammals, birds, and other marine life. The growing international market for squid and declining squid production from other parts of the world has resulted in an increased demand for California market squid, which, in turn, has led to newer, larger, and more efficient vessels entering the fishery and increased processing capacity.

- (b) ~~—(b)~~ The Legislature finds that the lack of research on market squid and the lack of annual at-sea surveys to determine the status of the resource, combined with the increased demand for, and fishing effort on, market squid could result in overfishing of the resource, damaging the resource, and financially harming those persons engaged in the taking, landing, processing, and sale of market squid.
- (c) ~~(c)~~ The Legislature further finds that some individuals, vessels, and processing plants engaged in the market squid fishery have no other viable alternative fisheries available to them and that a decline or a loss of the market squid resource would cause economic devastation to the individuals or corporations engaged in the market squid fishery.
- (d) ~~(d)~~ The Legislature declares that to prevent excessive fishing effort in the market squid fishery and to develop a plan for the sustainable harvest of market squid, it is necessary to adopt and implement a fishery management plan for the California market squid fishery that sustains both the squid population and the marine life that depends on squid.
- (e) ~~(e)~~ The Legislature finds that a sustainable California market squid fishery can best be ensured through ongoing oversight and management of the fishery by the Commission. With regard to the market squid fishery, the Legislature urges that any limited entry component of a fishery management plan, if necessary, should be adopted for the primary purpose of protecting the resource and not simply for the purpose of diminishing or advancing the economic interests of any particular individual or group.

~~This~~The legislation further placed a moratorium on the number of vessels in the fishery, established a \$2,500 permit for market squid vessels and light boats and initiated a three-year study of the fishery. In addition, ~~a~~the first Squid Fishery Advisory Committee (SFAC) and a



Squid Research Scientific Committee (SRSC) were formed to advise the California Department of Fish and Game (Department) on research and interim measures. Further, SB 364 required the Department to submit a report on the status of the market squid fishery with recommendations for a market squid conservation and management plan. In April 2001, the Department submitted the report, which was developed through the cooperative efforts of scientists, fishing industry representatives and other stakeholders. Late in 2001, the Legislature delegated management authority for the squid fishery to the Fish and Game Commission (Commission), including adoption of an MSFMP.

The Legislature recognized that little ~~is was~~ known about market squid population dynamics, the size of the resource and other biological information. In 1998, the Department developed and implemented a large-scale monitoring and biological research program on the market squid fishery and resource. ~~This~~The program ~~has and will~~continuecontinues to provide critical information necessary to ~~the~~the ~~development of sound~~ long-term management strategies.

During the initial three years of study, contracted independent researchers (in conjunction with Department employees) explored several science-based methods for developing management strategies for the fishery. ~~Some of this research examined market squid life history and discovered~~Research showed that the lifespan of market squid is less than one year. ~~Fishery dependent research shows, and~~ that market squid availability, and likely their abundance, is highly variable among seasons. ~~These~~The findings indicate that traditional assessment methods used to determine biomass cannot be applied to market squid.

1.1.2. Rationale for MSFMP Review

Between 2014 and 2017, fishing communities from northern California developed a petition that was submitted to the Commission for a community-based squid fishery with its own quota for the ports of Noyo, Eureka, and Crescent City. In August 2021, Monterey area fishermen submitted a petition seeking additional time restrictions for the fishery. The State of Oregon also established commercial squid fishery management measures and regulations requiring the use of purse seine rib lines in 2022. The inquiry for a community quota outside the already established restricted access program, the request for modified time restrictions in Monterey, changes to squid fishery management measures and regulations in Oregon, and the



development of the Department's first Enhanced Status Report (ESR) for market squid led to consideration and discussion of potential squid fishery management changes in California. With increasing interest in evaluating existing management and uncertainty involving climate change impacts on sustainable fisheries, the Department determined a need to revisit market squid regulations and initiated the process to form an advisory committee, pursuant to Section 53.02, Title 14, California Code of Regulations (CCR).

In 2023, the Department, with support from the California Ocean Protection Council and Resources Legacy Fund, initiated a review process for the market squid fishery and MSFMP. The Department convened a new SFAC charged with reviewing the fishery and advising the Department on potential changes to California market squid fishery management. The goals of the SFAC process were to:

- Review changes in fishery dynamics
- Respond to past stakeholder input and management change petitions
- Consider potential new management measures as guided by the MSFMP, ESR, and MLMA
- Work with a postdoctoral scholar (post-doc) to forecast future landings and catch per unit effort (CPUE) and evaluate harvest control measures in the context of climate change using Empirical Dynamic Modelling (EDM)
- Explore opportunities for small-scale fisheries and the ability for coastal communities and local economies to adapt to climate change
- Modernize data collection and fishery monitoring efforts, including the use of electronic reporting

1.1.2.1.1.3. Location and General Characteristics of the Project Area

The marine environment is composed of numerous microhabitats, each of which supports a distinct assemblage of species uniquely adapted to their environment. The harvest of market squid is proposed statewide, in all areas defined as ocean waters in ~~the California Code of Regulations (CCR)~~ Title 14 §27.00, except where prohibited or restricted, as specified, in state marine protected areas (MPAs), and as regulated by provision of this MSFMP. Generally, market squid are harvested nearshore on sandy bottom habitats. ~~Landing records indicate that the fishery is~~Seasonal shifts in resource availability and timing of peak market squid spawning results in vessel participation



typically concentrated in two distinct fishing areas: Monterey Bay, central California in the summer and the Southern California Bight, primarily around the Channel Islands. Thirty years ago, the commercial fishery was primarily focused in Monterey Bay; however, since the 1985-1986 season the vast majority of the catch is taken from the Southern California Bight. An in-depth description of the habitat preferences and life history characteristics of market squid is found in Chapter 2. (SCB) in the late fall and early winter.

1.1.3 In the late fall and early winter, colder temperatures and winter storms generate more mixing of the water column, coinciding with increased landings in the SCB from the northern Channel Islands southward to the U.S. / Mexico International border. During the summer, fishing effort in central California is focused around Monterey Bay and tends to occur between April and September, coinciding with the upwelling season. Prior to the 1980s, the majority of commercial catch came from the Monterey Bay area. However, since the 1985-1986 season, the majority of the catch has come from the SCB. Landings spiked dramatically in the Monterey Bay area in 2010 and continued through 2014. An in-depth description of habitat associations and life history characteristics of market squid is found in Chapter 2.

1.2. The Marine Life Management Act

The MLMA of 1998 created policies, goals, and objectives to govern the conservation, sustainable use and restoration of California's living marine resources. The MLMA opened a new chapter in the conservation and management of California's marine wildlife and fisheries (Weber and Heneman 2000) and gave the Commission and Department specific authorities, goals, objectives, and mandates for managing marine resources.

Goal I: Ensure Long-Term Resource Conservation and Sustainability

The MLMA's overriding goal is to ensure the conservation, sustainable use, and restoration of California's marine living resources [FGC §7050(b)]. ~~This~~The goal includes the conservation of healthy and diverse marine ecosystems and marine living resources [FGC §7050(b)(1)]. ~~To achieve this goal, the MLMA calls~~], as well as for allowing and encouraging only those activities and uses that are sustainable [FGC §7050(b)(2)]. Sustainability is the overriding principle of the MLMA ~~and the NFMP.~~



Within this overall policy on marine living resources, the MLMA sets the State's policy for marine fisheries [FGC §7055; §7056]. Objectives include:

1. ~~1.~~ Conserve the health and diversity of marine ecosystems and marine living resources [FGC §7050(b)(1)].
2. ~~2.~~ Allow and encourage only those activities and uses of marine living resources that are sustainable [FGC §7050 (b)(2)].
3. ~~3.~~ Maintain the health of marine fishery habitat, and to the extent feasible, restore or enhance that habitat where appropriate [FGC §7056(b) and §7084].

Goal II: Employ Science-based Decision-making

~~At the core of the MLMA is the principle of basing decisions on sound science and other useful information. With this in mind, the~~The MLMA includes, as a general objective, promotion of marine ecosystem research that will enable better management decisions [FGC §7050(b)(5)]. The MLMA also calls for basing decisions on the best available scientific information as well as other information that the Department and the Commission possess [FGC §7050(b)(6)]. While the MLMA emphasizes scientific information in making decisions regarding the conservation and sustainable use of California's marine living resources, it also recognizes the value and importance of relying upon other sources of information such as local knowledge [FGC §7056(h)].

Objectives include:

1. ~~1.~~ Encourage fishery management decisions that are adaptive and based on the best available information and that do not substantially delay the management process [FGC §7056(g) and FGC § 7072(b)].
2. ~~2.~~ Create cooperative and collaborative partnerships with fishery participants, public and private entities, and research institutions to acquire Essential Fishery Information (EFI) and to design and conduct research and monitoring [FGC §7056(k)].
3. ~~3.~~ Periodically review the management system for effectiveness in achieving sustainability goals and for fairness and reasonableness in its interaction with people affected by management [FGC §7056(m)].

Goal III: Increase Constituent Involvement in Management



The MLMA focuses special attention on constituent involvement in marine fisheries management – not only in the development of management plans but in other key activities such as research and implementation of management decisions. The MLMA calls for involving “all interested parties” in making decisions regarding marine living resources [§7050(b)(7)] and for disseminating accurate information on the status of marine life and its management §7050(b)(8)]. Objectives include:

1. ~~1.~~ Develop an open decision-making process and seek the advice and assistance of interested parties so as to consider relevant information including local knowledge [FGC §7056(h)].
2. ~~2.~~ Allow fishery participants to propose methods to prevent or reduce excess effort in market squid fishery [FGC §7056(e)].
3. ~~3.~~ Involve constituents in preparing Fishery Management Plans (FMPs) [FGC §7076(a)].
4. ~~4.~~ Involve interested people in designing research protocols for individual FMPs [FGC §7074(b)].

Goal IV: Balance and Enhance Socio-economic Benefits

California’s fisheries are a public trust resource. As such they are to be protected, conserved and managed for the public benefit, which may include food production, commerce and trade, subsistence, cultural values, recreational opportunities, maintenance of viable ecosystems, and scientific research. None of these purposes need be mutually exclusive and, ideally, ~~as many of these purposes~~ should be encouraged ~~as to the degree~~ possible, consistent with resource conservation. The MLMA requires recognition of important aesthetic, educational, scientific, and recreational uses that do not require taking marine wildlife, as well as the economic and cultural importance of sustainable sport and commercial fisheries [FGC §7050(b)(3)(4)].

Objectives include:

1. Recognize the importance of non-consumptive uses of California’s marine resources [FGC §7050(b)(3)].
2. Observe the long-term interests of people dependent on fishing for food, livelihood, or recreation, and minimize the adverse impacts of fishery management on small scale fisheries, coastal communities, and local economies [FGC §7056(i)(j)].
3. Develop mechanisms to resolve disputes about issues such as, but not limited to, access, allocation, and gear conflicts [FGC §7056(k); FGC §7059(b)(2)].



Goal V: Identify Implementation Costs and Sources of Funding

The Department's management of commercial and recreational fisheries has been supported by general funds appropriated by the Legislature, by federal funds for commercial and recreational fishing, and by user fees in the form of permits, licenses, and other fees (FGC §710.5). In FGC §711(c), the Legislature stipulated that revenues for recreational hunting and ~~sport~~ fishing programs not be used for other purposes, including commercial fishing. In 1993, the Legislature reiterated its intent to ensure adequate funding from appropriate sources (FGC §711).

Objectives:

1. Help ensure that fees more accurately reflect all costs of the Department's management [FGC §710.5].
2. Identify the resources and time necessary to acquire ~~EF~~essential fishery information [FGC §7081(b)].
3. Cooperate with the Legislature, the commercial fishing industry, recreational fishermen, the environmental community, and other interested people to identify alternative sources of funding for “the department's necessary marine resource management and protection responsibilities” [FGC §710.7(c)].

1.2.1. MLMA Master Plan

The MLMA Master Plan (Master Plan) is a roadmap designed by the Department to achieve the objectives and goals described in the MLMA. As many fisheries are under state jurisdiction, and given the limited resources of the Department, prioritizing management efforts is essential. First adopted in 2001, the Master Plan provides guidance on prioritization, as well as tools and resources to aid the management process. It advises on the development of FMPs to manage priority species, including market squid, based on the results of a productivity and susceptibility analysis. A second revised Master Plan was adopted in 2018 that enhanced the implementation of the MLMA through new tools, insights, and priorities that have emerged since 2001. The Master Plan also presents an overview on performing stock assessments and utilizing population modeling techniques for data limited fisheries such as market squid.

The exploration of EDM is an example of how new tools and insights have informed the management of market squid since the



implementation of the original MSFMP. Other guidance topics in the Master Plan include prioritization of management efforts, meeting stock sustainability objectives, meeting ecosystem objectives, integrating MPAs into fisheries management, adapting to climate change, advancing socioeconomic and community objectives, making management adaptive, using the best available science, enhancing and scaling MLMA based management, ensuring the Master Plan is an effective resource and guide, and engaging stakeholders and collaborating with partners. Master Plan goals and objectives were a primary focus during the 2023-2024 SFAC process. The Master Plan can be found online at <https://wildlife.ca.gov/Conservation/Marine/MLMA/Master-Plan>.

1.2.2. Enhanced Status Reports

In addition to the Master Plan, ESRs are key documents to implementing the goals of the MLMA. ESRs are publicly available and provide an overview of a specific fishery. Information described in ESRs include annual landings, species biology and history, current management activities, monitoring activities, and assessment efforts. The Master Plan envisions the use of ESRs in lieu of full FMPs for species with low levels of management need. Since enactment of the original Master Plan in 2001, 36 ESRs have been developed, covering 45 of the State's most significant commercial and recreational fisheries, including market squid. Unlike other species, where ESRs are used in the absence of a full FMP, the market squid ESR supplements the FMP. It summarizes all available and the latest ESI, ensuring the transparency and accessibility goals outlined by the MLMA are achieved. Unlike an FMP, the market squid ESR is updated annually with key fishery and scientific information. The ESR is available on the Department's Marine Species Portal at <https://marinespecies.wildlife.ca.gov/market-squid/>

1.1.4.

1.3. Specific Goals and Objectives of the Market Squid Fishery Management Plan

1.3.1. Goals:

- To manage the market squid resource to ensure long-term resource conservation and sustainability;
- To develop a framework for management that will be responsive to environmental and socioeconomic changes.



1.3.2. Objectives:

- ~~1.3.2.1~~ Provide for the sustainable use of the market squid resource by commercial and recreational fisheries for the optimum long-term benefits of present and future generations;
- ~~1.3.2.2~~ Maintain an adequate forage reserve for marine mammals, fish and seabirds;
- ~~1.3.2.3~~ Use adaptive management to provide for necessary changes and modifications of management measures in a timely and efficient manner;
- ~~1.3.2.4~~ Ensure proper utilization, the avoidance of bycatch in the market squid fishery, and the avoidance of wastage of market squid in other fisheries;
- ~~1.3.2.5~~ Support and promote increased understanding of market squid natural history, population dynamics, and its ecosystem's role to improve management;
- ~~1.3.2.6~~ Ensure effective monitoring of the market squid population and its fisheries;
- ~~1.3.2.7~~ Ensure enforcement of regulations;
- ~~1.3.2.8~~ Identify, protect, and restore critical market squid habitat;
- ~~1.3.2.9~~ Minimize the adverse impacts of management on small-scale fisheries, coastal communities, and local economies.

1.4. ~~1.1.5~~ Constituent Involvement

The MLMA calls for meaningful constituent involvement in the development of each ~~fishery management plan (FMP)~~, and requires the Department to develop a process to involve interested parties in ~~that process.~~ the development or review of an FMP. In addition, the California Environmental Quality Act (CEQA) requires public consultation during lead agency review of all proposed projects subject to a certified regulatory program [See generally Public Resources Code (PCRPRC) §21080.5(d)(2); see also CCR Title 14, §781.5]. The MSFMP and its associated implementing regulations is, of course, such a project under CEQA.

1.4.1. Involvement in the Original 2005 FMP Development

In 1998, two advisory committees were formed to examine the market squid fishery: the SFAC and the SRSC. The SFAC included fishery participants, environmentalists, and scientists and advised the Department on proposed management strategies and changes to the fishery. The SRSC comprised national and international university,



agency, and private industry scientists and made recommendations on squid research protocols and methods as well as management strategies. ~~These~~The two committees met from 1998 through 2000 and played a major role in the interim management of the fishery.

The Department prepared and filed a Notice of Preparation (NOP) with the State Clearinghouse in December 2001 for distribution to appropriate responsible and trustee agencies for their input and comments. Further, the notice was provided to individuals and organizations that had expressed prior interest in regulatory actions regarding market squid. Comments received in response to the NOP and a preliminary draft MSFMP are addressed in Section 4 of the 2005 MSFMP.

The Department also conducted two public meetings to present options for management of the market squid fishery. The first meeting was held on 26 January 2001 in Port Hueneme and the second was in Monterey on 27 January 2001. The proposed project for management of the market squid fishery was developed through ~~these~~the two venues.

The Department released the Preliminary Draft MSFMP for public review and comment on 15 May 2002. The Preliminary Draft MSFMP was sent to interested parties and was also posted on the Department's web site for public review. The Department accepted all written comments regarding the Preliminary Draft MSFMP that were received before 8 February 2003. Responses to comments regarding the Preliminary Draft MSFMP are addressed in Section 4.

The Department submitted to the Commission the Draft MSFMP on 7 July 2003. ~~This document~~The MSFMP was the result of revisions to the Preliminary Draft MSFMP, which was released for nearly a year of public review in 2002. It also went through an extensive scientific peer review process. ~~Based on these reviews~~As a result, substantial improvements were incorporated into the 2003 Draft MSFMP, and it was completely reorganized into four sections and streamlined for clarity and content. Public testimony on the Draft MSFMP was taken at the 1 August 2003 and 5 December 2003 Commission meetings.

At the 3 December 2003 meeting, the Commission asked the Department to incorporate additional alternatives and analysis into the Draft MSFMP. A revised Draft MSFMP was released for public review and comment on 12 April 2004. Public testimony on the revised Draft



MSFMP was taken by the Commission at the 4 May 2004, 27 August 2004, and 3 December 2004 meetings. In addition, the Commission held special hearings in Monterey (23 July 2004) and San Pedro (13 August 2004) to take public testimony directly from fishermen in the ports where the majority of squid fishing activity occurs.

The Commission adopted the MSFMP at its 27 August 2004 and 3 December 2004 meetings. The Department has addressed all written comments regarding the Draft MSFMP received through 3 December 2004 in Section 4- of the original MSFMP.

1.4.2. Involvement in the FMP Review

In spring 2022, one-on-one interviews with interested stakeholders were conducted by the professional facilitation team, Concur Inc., to capture the broad range of perspectives on potential changes for squid fishery management and to test the willingness of interviewees to engage in a deliberative advisory process. In fall 2022, a call for nominations was released by the Department to squid fishery stakeholders, California Native American Tribes, and the public. SFAC members were selected to participate as representatives for specific stakeholder groups, and an SFAC listserv was developed to keep the public and interested Tribes informed of the SFAC's progress. Concur assisted in developing a biography portfolio that included each of the SFAC members, meeting ground rules, and a committee charge to help the SFAC prepare for a series of meetings. The SFAC consisted of a broad group of stakeholders, including representatives from the fishing industry, non-governmental organizations, government scientists, and the public.

The SFAC met 10 times between July 2023 and May 2024. Input was compiled by the Department, reviewed with SFAC members, and eventually used to develop final Department recommendations. The recommendations were presented to the SFAC over the course of a two-day final meeting to gauge agreement, receive recommended changes, and finalize the Departments recommendations.

In July and November 2023, the Department provided written updates on the SFAC process to the Fish and Game Commission's Marine Resources Committee (MRC). In July 2024, the MRC received and discussed the Department's submitted SFAC report, which detailed the Department's proposed recommendations after concluding the SFAC process. At the November 2024 MRC meeting, the MRC



recommended moving forward with the Department's recommendations regarding changes in monitoring, further exploration in fishing dynamics and EDM, fishing effort and temporal closures, small scale fishery access, gear, and lighting and seabird habitat.

1.5. The Structure of the Market Squid Fishery Management Process under the Marine Life Management Act

The MLMA recognizes the need to adapt to changing circumstances. ~~It does so by embracing and embraces~~ the principle of adaptive management. The MLMA defines ~~this principle~~ adaptive management as a scientific policy that seeks to improve management “by viewing program actions as tools for learning” (FGC §90.1). Management measures must be designed to provide useful information whether they succeed or fail. Monitoring and evaluation of fisheries are needed to detect the effect of the measures.

The MLMA explicitly calls for ensuring that managers can respond to changing environmental and socio-economic conditions [FGC §7056(l)], and requires that FMPs establish a procedure for regular review and amendment, if that is appropriate [FGC §7087(a)]. Because the review and amendment of an FMP is generally a lengthy process, the MLMA allows greater flexibility in responding to changes in a fishery by allowing an FMP to specify the kinds of regulations that may be changed without amending the FMP itself [FGC §7087(b)]. ~~- This process mirrors the federal government's process~~ Federal regulatory processes are similar, where annual quotas or in-seasons adjustments in management measures may generally be made without resorting to the lengthy process of amending the FMP itself.

To meet the standards of the MLMA for adaptive management, the MSFMP establishes a hierarchical framework within which adjustments to the management of the market squid fishery can be made in a responsible and timely manner. Depending upon the scale and significance of needed changes in management, the FMP itself may need to be amended or an in-season decision by the Commission or Department may be appropriate. The former action requires much greater analysis and public review than does the latter. Standards for determining the appropriate level of action are described below.



1.5.1. ~~1.2.1~~ Process of Plan Review

The MLMA requires public and peer review for all ~~fishery management plans~~ (FMPs) (FGC §7075-7078). For public review, the Department solicits input and/or assistance from the various user groups who may be affected by the FMP or other interested parties prior to and during development of an FMP. The Department can also approach the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries), Sea Grant, the Pacific Fishery Management Council (PFMC), or advisory committees established by the Department for advice. Once the FMP or amendment is developed, the plan must be submitted to the Commission and available to the public for review and comment. The Commission must hold at least two public hearings on the FMP. Any comments or proposals made to the Commission relative to the FMP may be considered by the Commission and forwarded to the Department for inclusion into the FMP.

For peer review, the Department set up a formalized procedure as required by FGC §7062 for examining the science that is used as the basis for any management recommendation. The peer review panel was given all pertinent comments received by the Department from fishery participants or other interested parties. Any suggestions made through peer review can be used in whole or part; however, if the Department disagrees with the findings and chooses not to use the recommendations, an explanation of why the peer review recommendations were not used must accompany the FMP or amendment. Comments received from the peer review committee and Department responses were presented in Section 4 of the Draft MSFMP dated 12 April 2004. As the overall management framework was not changed in this amendment, additional external peer review was not conducted. Changes presented are supported by the same scientific basis and consistent with the framework established in the original 2005 MSFMP.

1.2.2 Following adoption of the amended MSFMP, the Department recommends periodic review to evaluate fishery performance as a result of new requirements and to determine if additional amendments or regulatory changes are needed. The ESR is the primary document to find up-to-date information on California market squid fishery and fishery management.



1.5.1.1. Types of Framework Actions

The Commission may take four general types of actions within the framework of the MSFMP: 1) FMP amendment, 2) full rulemaking, 3) notice action, and 4) prescribed action. Each type of action reflects a different degree of change in management - from changing a basic feature of the MSFMP itself to implementing a routine administrative matter, such as closing the fishery when seasonal catch limit (SCL) is reached. Brief descriptions of each of these types action type and the conditions for their use follow.

1.2.2.1 FMP Amendment

FMP framework management is designed to be flexible and adaptable to a wide range of future conditions, and intended to function without the need for frequent amendment. However, unforeseen biological, environmental, social or economic developments may create a situation under which the MSFMP does not adequately provide effective management of the market squid fishery. Under such circumstances, the Commission could amend the MSFMP.

The MSFMP must be amended if the change in management is a major or controversial action outside the scope of the MSFMP. Examples of such actions include:

- changes to management objectives;
- a change in the “overfished” or “overfishing” definitions;
- amendments to any procedures required by the FMP;
- revisions to any management measures that are fixed in the FMP.

Besides obtaining the views of advisory bodies, holding public hearings, and soliciting public comments, preparation and adoption of an amendment to the MSFMP will may require environmental analysis of proposed changes under CEQA.

1.2.2.2 Full Rulemaking Actions

If changes to management measures will have a long-term effect, allow discretion in their application, or have impacts that may not have been analyzed previously, a Full Rulemaking full rulemaking process is required. This process, which must follow standard



Administrative Procedures Act procedures, normally requires at least three Commission meetings. ~~Full Rulemaking~~full rulemaking may also be used to declare a management measure "routine." In the ~~Full Rulemaking~~full rulemaking process, the Commission reviews the issues at a first meeting and authorizes its staff to publish notice of its intent to adopt regulations at a later meeting. This notice, which begins a minimum 45-day period for public comment, includes specific documentation including an Informative Digest that summarizes existing law and the effect of the proposed action, the deadline for public comments, the time and place of any public hearings, and contact information for obtaining additional information. The notice is sent to persons on the Commission's and Department's active mailing lists and published in the California Regulatory Notice Register.

At its second meeting, the Commission reviews the proposed measures and alternatives in detail and receives public comment. At the third meeting, the Commission hears public comment and adopts the final rules. Commission staff then submits the final rules to the Office of Administrative Law for procedural review prior to publication.

The Commission or the Department may refer an issue to a standing committee or appoint an ad-hoc advisory committee to conduct further analyses and/or develop recommendations. The composition of such committees will include the Department, other agencies with statutory responsibility for the issue, representatives from affected groups, and any other persons chosen by the Commission.

This process does not diminish the authority of the Director ~~of the Department (Director)~~ or the Commission to take emergency regulatory action under FGC §7710, California Government Code (CGC) §11346.1, or FGC §240.

1.2.2.3 Notice Actions

Once a measure (such as establishing annual catch quotas) has been classified as routine through the ~~Full Rulemaking~~full rulemaking Action process, it may be modified after a single meeting of the Commission if both of the following conditions are met:

- the modification is proposed for the same purpose as the original measure;



- impacts of the modification are within the scope of the impacts analyzed when the measure was originally classified as routine.

Before acting on such a proposal, the Commission will send a written notice describing the proposed action to people on the Commission's and Department's active mailing list and will provide a 15-day period for comment.

1.2.2.4 Prescribed Actions

When an action is non-discretionary and the impacts have already been analyzed through Full Rulemakingfull rulemaking, the Department may take the action without prior public notice, opportunity to comment, or a Commission meeting. An example of such a Prescribed Action is the closure of a fishery when a quota has been reached. The Full Rulemakingfull rulemaking process that authorized the Prescribed Action must specify methods for notifying the public.

1.5.1.2. 1.2.2.5 Review of Management Measures

The MLMA requires periodic review of management measures because environmental, social, and economic changes during the year may lead to consideration of regulatory changes under the framework described above. The MSFMP proposes that the Department conduct a periodic review to determine the effectiveness of market squid regulations in accomplishing the goals and objectives of the MSFMP. - ThisPeriodic review will determine whether any resource, conservation, social, or economic issues exist that require a management response.

Examples of biological issues that might trigger further review and possible regulatory action are:

- catch that is projected to exceed the allowable catch limits;
- increased interaction with non-target species;
- any adverse or significant change in the biological characteristics of harvested market squid stock (e.g., age composition);
- existing or imminent overfishing;
- development of a stock assessment for market squid that significantly changes the estimates of impacts from current management;



Examples of social or economic issues that may be addressed in the periodic review are:

- gear conflicts, or conflicts between competing user groups;
- extension of fishing and marketing opportunities as long as practicable;
- improvements to product volume and flow to the consumer or user;
- to increase economic yield;
- to maintain or improve the safety of fishing operations;
- to increase or decrease fishing efficiency;
- to maintain or improve product quality;
- to maintain or improve data collection, including means for verification;
- to maintain or improve monitoring and enforcement;
- to address any other measurable benefit to the fishery.

If the Department determines that current management of the market squid fishery is not meeting the goals of the MSFMP, the Department will may present the results of this review such information to the an advisory committee(s) established under the MSFMP to seek their views and recommendations. The Department will then present its recommendations and views of the advisory committee(s) to the Commission regarding the need for changes in management of the market squid fishery. The Department needs to will present the rationale, data and analyses in support of its recommendations for regulatory changes. The advisory committee(s) may also make management recommendations to the Department. The Commission will then determine whether to consider an amendment to the MSFMP or a full rulemaking action for the regulations implementing it.

1.6. ~~1.3~~ Authority and Responsibility

As per the California Constitution, the State Legislature, through statute, may provide for the seasons and the conditions under which different species of fish may be taken. California law consists of 29 codes including the FGC. Laws in the FGC consist of statutes and propositions passed by the voters of the state. Statutes, such as MLMA, are chaptered bills that have passed through both houses of the Legislature and ultimately signed by the Governor and recorded by the Secretary of State. The FGC is administered and enforced through regulations. The rulemaking powers of the Commission, a body



created by the Constitution and appointed by the Governor, are delegated to it by the Legislature.

The Department is the state agency charged with carrying out certain policies adopted by the State Legislature and the Commission. The Department enforces statutes and regulations governing recreational and commercial fishing activities, conducts biological research, monitors fisheries, and collects fishery statistics necessary to protect, conserve, and manage the living marine resources of California.

Other state agencies have functions and responsibilities that directly or indirectly affect the management of ocean and coastal resources. In addition, marine resources are also managed by federal laws governing the take of seabirds, marine mammals, fish, and shellfish (Weber and Heneman 2000).

1.6.1. ~~1.3.1~~ California Environmental Quality Act

The Legislature enacted CEQA in 1970 to serve primarily as a means to require public agency decision makers to document and consider the environmental implications of their actions. In so doing, CEQA is premised on a number of Legislative findings and declarations, including a finding that it is "necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man." ~~[PCRPRC §21000(b)]~~ CEQA also codifies State policy to, among other things, ~~"[p]revent"~~ "Prevent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history" [Id., ~~PCRPRC~~ §21001(c)]. A similar provision in the FGC also declares: "It is hereby declared to be the policy of the State to encourage the conservation, maintenance, and utilization of the living resources of the ocean and other waters under the jurisdiction and influence of the State for the benefit of all the citizens of the State and to promote the development of local fisheries and distant-water fisheries based in California in harmony with international law respecting fishing and the conservation of the living resources of the oceans and other waters under the jurisdiction and influence of the State." (FGC §7055) CEQA applies to all "governmental agencies at all levels" in California, including "state agencies, boards, and commissions" [~~PCRPRC~~ §21000(g), 21001(f)(g)]. Public agencies, in turn, must comply with CEQA whenever they propose to approve or carry out a discretionary



project that may have a significant effect on the environment (see generally *Id.*, [PCRPRC](#) §21080). For purposes of CEQA, a project includes “an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment,” that is, like the proposed project, “directly undertaken by any public agency” [*Id.*, [PCRPRC](#) §21065(a)]. Moreover, as mandated by the Legislature, “it is the policy of the state that projects to be carried out by public agencies be subject to the same level of review and consideration under [CEQA] as that of project ~~projects~~ required to be approved by public agencies” (*Id.*, [PCRPRC](#) §21001.1).

Unlike its “procedural” federal counterpart, the National Environmental Policy Act (~~NEPA~~) (42 USC §4321 et seq.), CEQA contains a “substantive mandate” that public agencies refrain from approving projects with significant environmental effects if there are feasible mitigation measures or alternatives that can substantially lessen or avoid those effects (Mountain Lion Foundation, *supra*, 16 Cal.4th at p. 134; [PCRPRC](#) §21002). CEQA, as a result, “compels government first to identify the [significant] environmental effects of projects, and then to mitigate those adverse effects through the imposition of feasible mitigation measures or through the selection of feasible alternatives” [*Sierra Club v. State Board of Forestry* (1994) 7 Cal.4th 1215, 1233; see also *Sierra Club v. Gilroy City Council* (1990) 222 Cal. App.3d 30, 41.]. Public agencies fulfill CEQA’s mandate through required consultation with other interested public agencies and the public; preparation of ~~EIRs~~ (Environmental Impact Reports ([EIRs](#)), functional equivalent documents (see section 1.3.1.1), or other appropriate CEQA analysis; subjecting their environmental analyses to public review and comment, and preparing responses to public comments concerning the environmental impacts associated with their proposed projects; and ultimately adopting findings detailing compliance with CEQA’s substantive mandate. In this respect, the CEQA process “protects not only the environment but also informed self-government” [*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564 (internal quotation marks deleted)]. Indeed, as ~~recently~~ underscored by the California Supreme Court, compliance with these requirements, even in the context of a certified regulatory program, “ensures that members of the [governmental decision-making body] will fully consider the information necessary to render decisions that intelligently take into account the environmental consequences. It also promotes



the policy of citizen input underlying CEQA [Mountain Lion Foundation, supra, 16 Cal.4th at p. 133 (internal citations omitted)].

1.6.2. ~~1.3.1.1~~ Functional Equivalent

There is ~~one~~an alternative to the CEQA ~~Environmental Impact Report~~ ~~(EIR)~~/Negative Declaration (ND) requirement that exists for State agencies with activities that include protection of the environment as part of their regulatory program. Under this alternative, an agency may request certification of their program from the Resources Agency Secretary (~~PCRPRC~~ §21080.4 of CEQA). With certification, an agency may prepare functional equivalent environmental documents ~~(ED)~~ in lieu of EIRs or NDs (~~PCRPRC~~ §15252 CEQA Guidelines). The regulatory program of the Commission has been certified by the Resources Agency Secretary; thus, the Commission is eligible to submit an ~~environmental document~~ED in lieu of an EIR. However, the exception for the certified state regulatory program is not a blanket exemption from CEQA because the agency must still comply with CEQA policies, evaluation criteria, and standards.

1.6.3. ~~1.3.1.2~~ MSFMP Environmental Document

The ~~Environmental Document~~ ~~(ED)~~ found in Section 2 of the 2004 original FMP describes the proposed project options, status quo options (no project alternative), and a range of alternative project options evaluated in the draft MSFMP. It discusses the potential effects of the proposed project, reasonable alternatives to the proposed action and cumulative effects related to the proposed project and its alternatives. The discussion of alternatives focuses on the alternatives to the project that are capable of avoiding or substantially lessening the significant effects of the project, even if the alternatives would impede to some degree the attainment of the project objectives; or would be more costly. Of those alternatives, the ED examines in detail only the ones that could feasibly attain most of the basic objectives of the project. It does not consider alternatives whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

At its 27 August 2004 meeting in Morro Bay, the Commission certified the ~~Market Squid Fishery Management Plan's Environmental Document~~MSFMP's ED for consistency with the provisions of ~~the California Environmental Quality Act~~CEQA and adopted the MSFMP. As the amended FMP does not change the scientific basis for the management framework, and proposed changes are more protective



of the environment, a new CEQA document was not prepared as the process falls under a no action certified regulatory program.

1.6.4. ~~1.3.1.3~~ Federal Law

The Federal government manages the marine resources and fishing activities of the United States (~~US~~)U.S.) through the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The purpose of the MSFCMA is to provide conservation and management of ~~US~~U.S. fishery resources, develop domestic fisheries, and phase out foreign fishing activity within the Exclusive Economic Zone (EEZ) consisting of ocean waters from three miles to 200 miles offshore. Under MSFCMA, the federal government also has jurisdiction over fish species that occur predominately in the EEZ, and may preempt state jurisdiction over such fisheries in state waters when state management conflicts with a federal FMP.

Eight Regional Fishery Management Councils implement the goals of the MSFCMA in coordination with NOAA Fisheries, ~~United States~~U.S. Department of Commerce. PFMC manages several fisheries off Washington, Oregon, and California through FMPs. The State of California has representation on the PFMC. Five coastal pelagic species (CPS) are regulated under the federal Coastal Pelagic Species ~~Fishery Management Plan~~FMP (CPS FMP). ~~Under this plan, two species are actively managed:~~ including Pacific sardine ~~and~~(*Sardinops sagax*), Pacific mackerel; ~~three species are monitored only: (*Scomber japonicus*)~~, northern anchovy, (*Engraulis mordax*), jack mackerel, (*Trachurus symmetricus*), and market squid. ~~The (*Doryteuthis opalescens*) (PFMC delegated management authority for market squid to the State.2023).~~

Amendment 8 of the CPS FMP placed Pacific mackerel, Pacific sardine, jack mackerel, and market squid in a management unit with northern anchovy. In 2003, Amendment 10 established a proxy maximum sustainable yield (MSY), using egg escapement, for market squid to bring the CPS FMP into compliance with MSFCMA. In 2010, Amendment 13 incorporated new National Standard 1 guidelines that were developed in response to the Magnuson-Stevens Reauthorization Act of 2006 to end and prevent overfishing.

1.6.5. State Management of Market Squid

Management of the market squid fishery has been divided between the Legislature and the Commission. The market squid fishery was



minimally regulated until the passage of SB 364 in 1997. Since that time, both the Legislature and the Commission have adopted management measures for various components of this fishery (see Appendix B). ~~in the original 2005 MSFMP).~~

~~1.6.4.1.1.6.5.1.~~ ~~1.4.1~~ Legislative Responsibilities

Statutes passed by the Legislature regulating commercial fishing are contained in the FGC. Some provisions of law apply specifically to market squid, while others apply generally to the take of all fish including some area closures and gear restrictions. ~~Statutes pertaining specifically to the commercial take of market squid are listed in Appendix B.~~

Statutes pertaining specifically to the commercial take of market squid are listed in Appendix B in the original 2005 MSFMP.

The MLMA identifies a number of policies, goals, objectives, requirements, and processes for managing California's marine resources. These resources are to be managed to assure ecological, recreational, long-term economic, cultural, and social benefits.

The MLMA requires that FMPs form the primary basis for managing the State's marine fisheries. ~~A~~An FMP is a planning document that is based on best available scientific information and contains a comprehensive review of the fishery along with clear objectives and measures to promote sustainability of that fishery.

~~1.6.4.2.1.6.5.2.~~ ~~1.4.2~~ Commission and Department Responsibilities

The authority and responsibility of the Commission and the Department to make and enforce regulations governing recreational and commercial fishing are provided by the Legislature. General policies for the conduct of the Department are formulated by the Commission (FGC §704). General policy for conservation of aquatic resources is provided by FGC §7055, and specific policy for the management of marine resources (MLMA) is provided in FGC § 7050-7090.

~~1.6.4.3.1.6.5.3.~~ ~~1.4.3~~ Commercial Fisheries

Commercial fishing is regulated by the Legislature through statutes and by the Commission through regulations. Provisions relating to the taking and possession of fish for commercial purposes are provided in FGC §7600-9101 and CCR Title 14. With the passage of the SB 209 (2001),



authority to regulate the market squid fishery was delegated to the Commission.

~~1.6.4.4.1.6.5.4.~~ ~~1.4.4~~ Rulemaking Process under the Administrative Procedures Act (APA)

The California Constitution and Legislative statutes create public entities and can authorize them to make regulations ~~in order~~ to carry out their duties. The APA of the ~~California Government Code (CGC)~~ §11340-11359 guides the rulemaking process for such entities.

The Commission's general rulemaking authority is provided in FGC §200-221 and in other statutes throughout the ~~Fish and Game Code, FGC.~~ Basic minimum procedural requirements for the adoption, amendment or repeal of regulations are provided in the CGC §11346. Emergency rulemaking authorities are found in CGC §11346.1 and in FGC §240.-



Chapter 2. Background: A Description of the Species, the Fishery, and
Social and Economic Components of the Market Squid Fishery

Chapter 2. Background: A Description of the Species, the Fishery, and Social and Economic Components of the Market Squid Fishery

2.1. ~~2.1~~ Species Description

~~Squid (also referred to as Cephalopods) belong to the Market squid (*Doryteuthis (Loligo) opalescens*) or opalescent squid, are part of the class Cephalopoda of and the phylum Mollusca. There are approximately (Berry 1911). Approximately 750 recognized species of squids alive are recognized today and more than 10,000 fossil forms of cephalopods. Squid have large, well-developed eyes and strong parrot-like beaks. They use their fins for swimming in much the same way fish do and their funnel for extremely rapid "jet" propulsion forward or backward. The squid's capacity for sustained swimming allows it to migrate long distances as well as to move vertically through hundreds of meters of water during daily foraging (feeding) bouts.~~

~~The common name for *Loligo opalescens* Berry, 1911 is market squid or opalescent squid. At a recent international cephalopod meeting (February 2003), the consensus was that, based on morphology and molecular evidence, the scientific name for market squid should be changed to *Doryteuthis (Amerigo) opalescens* (F. G. Hochberg, pers. comm.). This has not been formalized nor published. Current authority for the squid fishery [Fish and Game Code (FGC) §8420] refers to *L. opalescens* as "market squid" and this common name is used throughout the Market Squid Fishery Management Plan (MSFMP) (FGC §8045).~~

Market squid belong to the family Loliginidae. ~~These squid and~~ generally have a mixed, iridescent (opalescent) coloration of milky white and purple; however, color changes can occur rapidly ~~in response to environmental conditions.~~ Similar to most squid species, market squid possess an ink sac, ~~which that~~ serves as a defense mechanism by expelling ink to confound predators. ~~Market squid are less than 3 mm at hatching and grow to an average mantle length of 152 mm at the time of spawning.~~ Squid have eight arms and two longer feeding tentacles. Squid have large, well-developed eyes and strong parrot-like beaks. Males are larger and more robust than females. Market squid are terminal spawners; spawning occurs at the end of their lifespan. ~~In California, commercial fisheries target adults during spawning events. Recent age studies indicate that squid are a semi-annual species; the average age of squid taken in the fishery is six months (range 4- life span (6 to 10 months, after hatching) (Butler et al. 2001).~~

2.1.1 At the Cephalopod International Advisory Council Symposium in Phuket, Thailand in February 2003, a consensus was reached that based on

morphology and molecular evidence, the scientific name for market squid should be changed from *Loligo opalescens* to *Doryteuthis (Amerigo) opalescens* (Anderson 2000, Vecchione et al. 2005). The name change was not formalized or published (CDFG 2005). The State currently refers to *Loligo opalescens* as market squid in statute (Fish and Game Code (FGC) §8420, §8597) and the Department uses the name market squid or *Loligo opalescens* throughout the original 2005 MSFMP (CDFG 2005).

2.2. **Range, Distribution, Stock Biomass, Genetic Stock Structure and Migration**

~~The range of market~~Market squid ~~is~~range from the southern tip of Baja California, Mexico (~~23° N latitude~~) to southeastern Alaska (~~55° N latitude~~). Juveniles and adults range throughout the California and Alaska Current systems (~~Reper Jereb et al. 2010~~). In California, market squid typically spawn in shallow, nearshore areas, and are generally found in central California in summer months, and ~~Sweeney 1984~~). Paralarvae, the life stage of ~~southern California~~ in winter months (Hardwick and Spratt 1979).

Ocean currents disperse newly hatched market squid ~~at the time of hatching, (called paralarvae) off egg bed areas. Paralarvae are often collected in the waters closer to the shoreline (found most commonly 1.0 to 3.0 kilometers (km) (0.6 to 1.9 miles (mi)) from shore, concentrated in areas where water masses converge (Okutani and McGowan 1969; Zeidberg and Hamner 2002).~~ ~~Their~~Market squid distribution is patchy, yet if squid are found at one site, it is likely that additional squid will be found in close proximity (contagious distribution). Market squid are found at depths of 30 meters (m) (98 feet (ft)) by day and 15 m (49 ft) at night, suggesting diel movement, and have been found as deep as 600 m (1,969 ft) during the day (Hunt et al. 2000; Zeidberg and Hamner 2002).

~~The California fleet currently fishes only adult squid during spawning events in limited geographic areas. The abundance of market squid at these known fishing areas is dramatically affected by environmental conditions, especially during El Niño events (when landings are minimal).~~

~~An El Niño event occurs when the sea surface temperatures in the eastern equatorial Pacific region along the coasts of Peru and Ecuador increase significantly above the average temperature for three or more months. A La Niña is characterized by unusually cold ocean temperatures in the equatorial Pacific. Currently, El Niños have a return period of four to five years. An El Niño Southern Oscillation (ENSO) describes the full range of the Southern Oscillation that includes both warming and cooling of sea surface temperatures when compared to a long-term average. The ENSO has two parts: the El Niño is the oceanic component and the Southern Oscillation is the atmospheric component of the phenomenon. Little is known about the present size, age structure, or status of the market squid population. At present, no direct, statistically valid population estimates are available.~~

~~Genetic analyses have not been successful in distinguishing separate stocks within the California fishery. Both Gilly (2003) and Reichow and Smith (Juvenile squid begin to school at a dorsal mantle length (DML) of 15.0 millimeters (mm) (0.6 inches (in)) (Yang et al. 1983, 1986) or 2.5 months of age (based on the growth curve presented in Butler et al. 2001) and occur on the continental shelf just off the bottom by day and throughout the water column at night (Zeidberg et al. 2004). As market squid reach 55.0 mm (2.2 in) DML they move off the continental slope (Zeidberg et al. 2004). Market squid use their fins for swimming in much the same way fish do and their funnel for extremely rapid "jet" propulsion forward or backward, which allows squid to migrate long distances from offshore pelagic waters to nearshore areas and form dense aggregations for spawning at an age of 6 to 10 months (Butler et al. 2001).~~

~~The number of different stocks or subpopulations of market squid along the entire Pacific Coast is currently unknown and genetic studies have drawn differing conclusions. Results from Cheng et al. (2020) provide preliminary support to the existence of smaller genetically distinct cohorts that continually spawn in California, as opposed to the prevailing notion that spawning occurs in two asynchronous peaks in the central California and southern California regions. A cohort is defined as a group of squid spawned during the same period. Both Gilly (2003) and Reichow and Smith (1999, 2001) concluded that spawning populations that are commercially harvested from the Channel Islands are not genetically distinguishable from those landed in Monterey Bay. Although While Gilly et al. (2001) found slight but significant genetic ~~distances~~differences between samples taken from central California and southern California, no temporal or spatial genetic differences for market squid within the ~~Southern California Bight~~SCB and no temporal differences between samples in the Monterey areas were evident. Presently, additional genetic research is now focusing on genetic differences at the extremes of the market squid range (Alaska and Baja California). Thus, the number of different stocks or subpopulations of market squid along the entire Pacific Coast is unknown at this time.~~

~~Market squid paralarvae are dispersed off egg bed areas by ocean currents and are found most commonly inshore, concentrated in areas where water masses converge (Okutani and McGowen 1969, Zeidberg and Hamner 2002). Although they are often widely distributed, the migration patterns of juveniles and prespawning adults are unknown. Midwater trawl surveys in 1999 collected juvenile market squid at 45% of the stations throughout the Southern California Bight (CDFG, unpublished data). Adult market squid migrate from pelagic waters to nearshore areas and form dense aggregations for spawning. Their vertical distribution during daylight hours ranges from 100 to 600 meters. At night, adults are located within the upper 100 m of the water column (Zeidberg and Hamner 2002).~~

2.3. ~~2.1.2~~ Age and Growth

Market squid egg hatching rate is determined by temperature, with incubation time ranging from 22 to 90 days at temperatures from 42-~~to~~ 68°F ~~Fahrenheit (F)~~ ~~(5.6 to 20 °Celsius(C))~~ (Isaac et al. 2001). Squid eggs are commonly deposited in areas with water temperatures between 50-~~and~~ 58°F ~~(10 to 14.4 °C)~~ resulting in incubation periods lasting from 34 to 52 days.

The age of market squid ~~was~~ determined using statoliths, balance structures analogous to otoliths in fish. Rings are deposited daily on statoliths and used to determine the ~~market squid~~ life span ~~of these invertebrates.~~ Daily ring deposition has been validated for several squid species including *L. opalescens* and other members of the family Loliginidae and has been shown to be an accurate method for ageing squid (Jackson and Domeier 2003; Hurley et al. 1985; Lipinski 1986; Jackson 1990a, ~~b~~ 1990b, 1994, 1998; Bettencourt et al. 1996; Spratt 1978).

Butler et al. (2001) found that market squid growth increases with age and is best described with a power function:

$$\text{DML (mm)} = 0.001342 * \text{Age}^{2.132}$$

where DML is dorsal mantle length in ~~millimeters~~ mm and age is in days ($r^2 = 0.95$, $df = 275$, $P < 0.001$). Paralarvae growth is slow [0.05 mm DML/day] during the first month, but growth rates increase dramatically as squid mature. ~~Growth may vary based on location and environmental conditions (Jackson 1994; Butler et al. 1999), with lower growth observed in years with warmer water conditions, likely due to a reduction in food availability (Jackson and Domeier 2003). Macewicz et al. (2004) fit an exponential function to describe the weight-length relationship for female squid:~~

~~$$\text{The } W = 0.000051 L^{2.8086}$$~~

~~Because the body weight of squid declines as eggs are released, the weight-length function was fit to data for mature females that had not yet spawned (pre-ovulatory females).~~

~~Market squid begin to reach sexual maturity 5 or 6 months after hatching (Butler et al. 1999; Butler et al. 2001). Once sexually mature, market squid fishery begin to recruit to the fishery and are fully vulnerable by 6 months of age (Butler et al. 2001). Maturation is thought to be size rather than age dependent, occurring at approximately 100 mm (4 in-California targets-) in DML for females (Butler et al. 1999; Jackson and Domeier 2003; Maxwell et al. 2005). Females may lay a large proportion of their eggs within the first few days following maturity (Macewicz et al. 2004) and gradually lay less~~

~~throughout the spawning squid that are believed to die shortly after spawning, thus, samples collected directly window and prior to dying.~~

~~Squid are a short-lived species, and the average age of squid taken in the fishery is 6 months (range 4 to 10 months) (Butler et al. 2001). Available age data exhibit little variation among months and suggest that a new cohort enters the fishery almost monthly. Figure 2-1 shows the age structure of the market squid catch by sex from fishing vessels are assumed to represent squid at or very near the end of their life span. From port samples collected from November 1998 through July 2000, 908 statoliths were aged (Figure 2-1). The mean age of harvested market squid was 188 days. The average male (190 days) was slightly older than average female (186 days); however, the range for females (108–302 days) was broader than males (114–281 days). More than 99% of the squid aged could be sexed, suggesting that the fishery primarily targets mature squid.~~

~~The age data exhibit little variation between months. This strongly suggests that a new cohort, a group of squid spawned during a certain period, enters the fishery almost monthly. Further, ageing techniques indicate that the average market squid lives approximately six months, but may be sexually mature as early as 3.6 months (108 days) and can spawn as late as 10 months (302 days). Less than 1 percent (4/908 or 0.4%) of the squid aged could not be sexed, demonstrating that sexually immature squid are rare among spawning or harvested squid.~~

~~Statolith samples from the 2000-2024 commercial catch have not been aged, and thus it is not yet possible to tell if the age structure of the stock has changed over time. Because it is thought that size is a better indicator of sexual maturity, potential changes in both size and age structure of the stock could provide valuable insight into fishing mortality and natural mortality. Average size fluctuates between and among fishing seasons, which could be attributed to different cohorts (Protasio et al. 2014). However, since age data have not been analyzed, attributing size differences to different cohorts cannot be determined at present. Future analyses of collected statoliths would provide useful information.~~

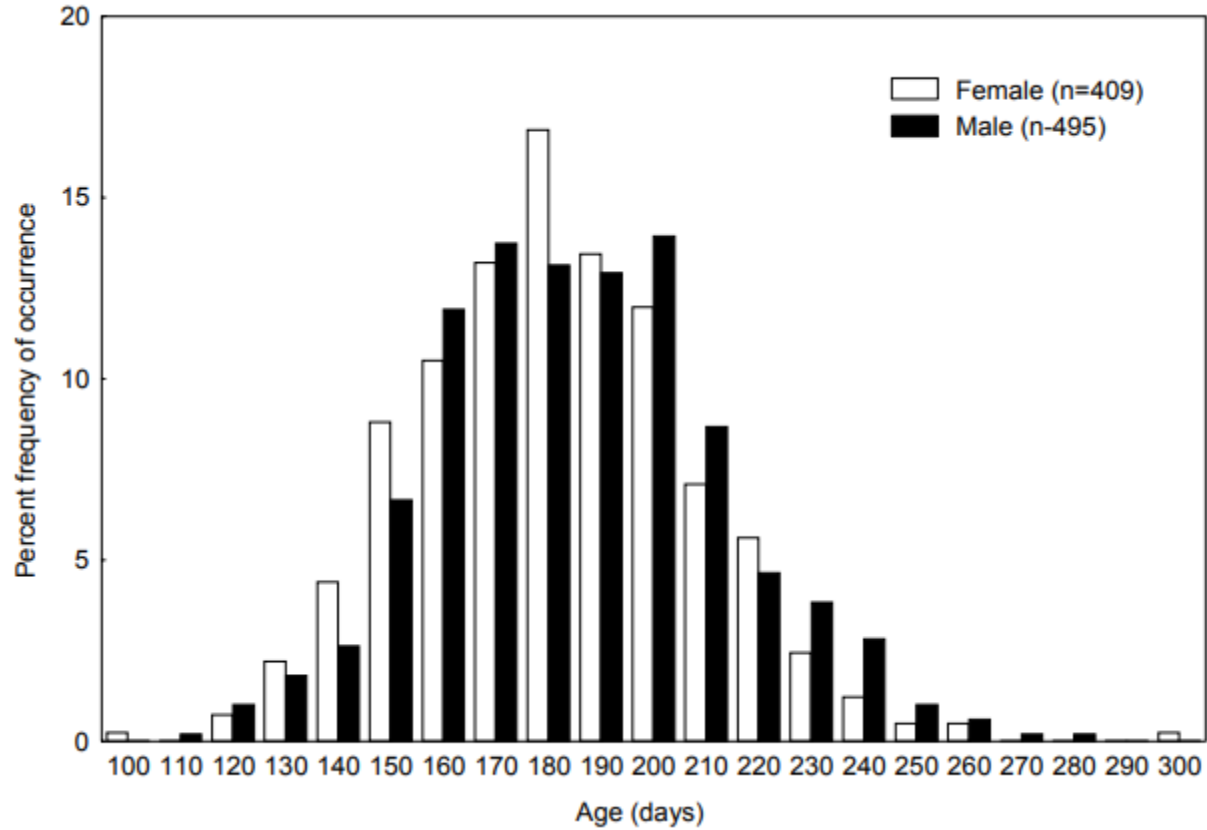


Figure 2_12-4-. Number of market squid by age from port samples by sex. Port samples used to determine percent frequency of occurrence were collected from November 1998 through July 2000 (CDFW Port Sampling database).

Reproduction, Seasonality and Fecundity

2.4. Reproduction, Fecundity, and Spawning market squid tend to congregate in dense schools, usually over sandy habitats where they deposit extensive egg masses. In Season

While there are year-round reports of spawning along the coast , generally, in central California, spawning activity starts around April and ends in October, while in southern California, spawning events tends to begin around October and end in April or May. The seasonality in spawning between central and southern California is attributable to ocean bottom temperatures rather than any biological difference. (Zeidberg et al. 2011b). During some years, reproductive activity and landings may occur throughout most of the year along the coast. Year-round spawning in several areas statewide at different times of the year likely reduces the effects of poor local conditions on survival of eggs or hatchlings and indicates that stock abundance is not solely dependent on availability of squid from a single spawning area. Spawning typically occurs at night but has been observed during daylight hours (Forsythe et al. 2004). Squid are terminal spawners, but females can spawn multiple times within a spawning period and may not die immediately after a single spawning event, as was previously believed (Hanlon et al. 2004).

Market squid aggregate to spawn, usually over sandy habitats where they deposit extensive egg masses. Mating takes place on spawning grounds but may also occur before squid move to their spawning sites. Male Gametes are exchanged directly, with male squid placeplacing spermatophores with their hectocotylized arm into the mantle cavity of females and eggs are fertilized as they are extruded (Hurley 1977). Zeidberg et al. (2004) observed market squid mating in groups of 1 to 2 males per female and small males appeared to insert spermatophores into the mantles of females that were being held in a mating embrace by larger males. The observed mating interactions were termed "sneaker mating."

Off California, a female squid produces approximately 20 egg capsules (egg cases), with each capsule containing about 200 individual eggs that are suspended in a gelatinous matrix. (Recksiek and Frey 1978). The number of egg cases deposited and the number of eggs within egg cases vary by locale (numbers are reduced in Oregon). Further, the number of eggs within a capsule and decline throughout the spawning season. Females attach each egg capsule individually to the bottom substrate. As spawning continues, mounds of egg capsules covering more than 100 square meters may be formed and appear to carpet the sandy substrate. Market squid

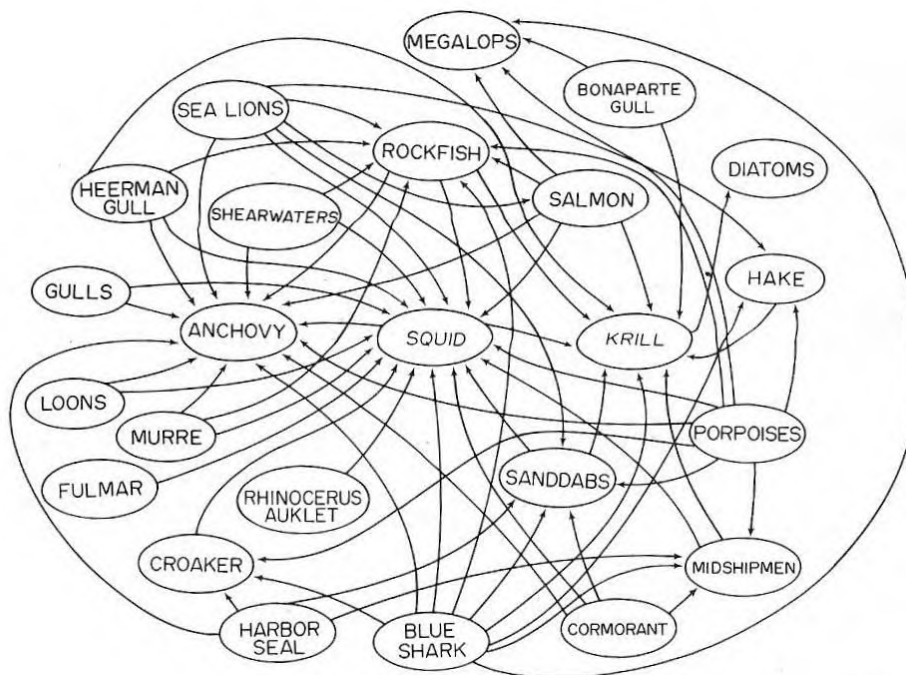
have been reported to die after completing their first and only spawning period (McGowan 1954, Fields 1965), but the duration of the spawning period is unknown. Recently, Hanlon et al. (2004) observed that females can spawn multiple times within a spawning period and do not die immediately after a single spawning event. In Monterey, spawning has been observed during daylight hours (Forsythe et al, 2004) as well as during the night (CDFG, unpublished data). After fertilization, embryonic development of egg cases in aquaria at 60.8°F (16.0°C) usually takes between 3 to 4 weeks, with hatching occurring on day 22 or 23 (Fields 1965). Hatching continues for about a week with numerous individuals appearing, but in decreasing volume. In cooler conditions the development time is probably at least a week longer and in warmer waters the longfin inshore squid (*Doryteuthis pealeii*) emerges after only 11 to 12 days of incubation (Fields 1965). While the embryo develops, considerable change takes place in the protective capsule. The capsules continue to take on water and when hatching begins, the volume and weight of each capsule reaches about five times its original value. When a juvenile squid is ready to hatch it makes an opening large enough to escape using strong mantle contractions and then becomes free-swimming. Based on laboratory observations, it is theorized that most of the juveniles emerge during the first several hours of darkness and with upward swimming and tidal drift, they are able to clear the egg beds and spawning grounds before light (Fields 1965).

The lifetime fecundity of market squid is a critical life history trait; fecundity must be known to estimate the biomass using either egg deposition or larval production methods (Hunter and Lo 1997). Macewicz et al. (2001a, 2001b, 2004) found that female market squid have a fixed reproductive output and die before developing and spawning all possible eggs in their ovaries. The fecundity-size relationship was found to be linear, and the potential fecundity is calculated as 29.8 multiplied by the DML (in mm) (Macewicz et al. 2004). For an average female with a dorsal mantle length DML of 129 mm, 129.0 mm (5.1 in), the potential fecundity is 3,844 eggs which increases with increasing length (Potential fecundity = $29.8 \times \text{dorsal mantle length}$ (Macewicz et al. 2003)). Dorval et al. (2013) found that the linear model did not account for a substantial amount of the total variation in potential fecundity and proposed using mean potential fecundity.

-

Squid-Market squid egg hatching rate is determined by temperature, with incubation time ranging from 22 to 90 days at temperatures ranging from 42.0 to 68.0 °F (5.6 to 20.0 °C) (Isaac et al. 2001). Eggs are commonly deposited in areas with water temperatures between 50 and 58 °F (10.0 to 14.4 °C), resulting in incubation periods lasting from 34 to 52 days.

Based on a short life span of 6-10 months, market squid appear to exhibit a very high natural mortality rate (Macewicz et al. 2004) and the adult population is composed of almost entirely new recruits. ~~No spawner recruit relationship has been demonstrated. These observations suggest, suggesting~~ that the entire stock is replaced annually, even in the absence of fishing. - ~~Thus, the stock is entirely dependent on successful~~ Natural mortality is attributed in part to heavy predation, as market squid are prey for a variety of fish and marine mammal predators in the California Current Ecosystem (CCE) (Figure 2-2). However, market squid also die shortly after spawning that occurs throughout each year coupled with good survival of recruits to adulthood, and it is thought that their fast growth and high metabolic rates contribute to these high natural mortality rates (O'Dor and Webber 1986).



2-9

Total mortality (natural and fishing). Food web for market squid, *Doryteuthis (Loligo) opalescens*, involving commercially important or abundant fish, birds, and marine mammals (from Morejohn, et al. 1978).

No studies directly estimate the natural mortality rate of squid. However, the total mortality has been estimated to range from 0.3 to 0.6 per month (Maxwell 2001) based on squid ageing data (squid from six to 10 months) (Maxwell et al. 2005; Butler, et al. 2001). Full recruitment of market squid into the fishery occurs at six months. Additional studies on market squid mortality are needed.)

2.6. Associated Species

Several marine worms utilize the squid as a host species; larval nematodes (roundworms), cestodes (tapeworms) and polychaetes (bristleworms) all have been recovered from squid and/or squid eggs. Nematodes, cestodes, and their larval stages have been found in market squid (Benjamins 2000). Walther and Gillespie 2002). In Monterey Bay, Riser (1949) cited infestation of squid by two types of plerocercoid larvae. These Plerocercoid larvae are tetraphyllidean cestodes that infest the large intestine of the squid. At Point Mugu, squid sampled from a commercial seafood outlet exhibited infestation by larval cestodes (orders Tetraphyllidea and Pseudophyllidea) and nematodes. These parasites were found to infect the eye, stomach, intestines, body cavity and tissues at a rate of 76.9% (Dailey 1969). The polychaete worm *Capitella ovincola* is was thought to be a predator of market squid eggs. This worm, because it has been found inside squid egg capsules (MacGinite and MacGinite 1949) but Fields 1965). In fact, *C. ovincola* eat the outer casing of the egg capsule, not the embryo itself (Zeidberg et al. 2011a). *Capitella ovincola* does not appear to affect squid fitness either by decreasing the egg hatching rate or triggering premature hatching (Morris et al. 1980). 1980) and was found to slightly increase the hatch rate of market squid eggs reared under laboratory conditions, suggesting a symbiotic relationship (Zeidberg et al. 2011a).

2.4.2.7. 2.1.6 Predator/Prey Relationships

2.4.1.2.7.1. 2.1.6.1 Market Squid as Predators

Market squid feed on a variety of prey during their life cycle. As larvae and juveniles, squid consume copepods and euphausiids. These fast-moving prey items are a challenge to young squid; they enhance the development of prey capture and escape skills (Preuss and Gilly 2000). euphausiids. As adults, market squid feed on fish, polychaete worms, squid (cannibalism), and

crustaceans such as shrimp and pelagic red crab. ~~Also, Market~~ squid ~~are feed with and likely upon coastal pelagic species and have also been~~ found in commercial catches of ~~anchovies, sardines, northern anchovy,~~ Pacific sardine, Pacific herring, (*Clupea pallasii*), Pacific mackerel, ~~jack mackerel~~ and ~~sauries~~ Pacific saury (*Cololabis saira*) where they feed with and most likely upon these fish (Fields 1965). ~~In Monterey Bay, larger squid have been found to feed chiefly on fish and cephalopods; however, there are significant differences in prey intake between depth and location rather than size classes (Karpov and Cailliet 1979).~~

Prey composition fluctuates with squid age, size, by depth and location, and reproductive status, ~~as well as, spatially.~~ (Karpov and Cailliet 1979). The availability of prey and the behavior of market squid at different depths and locations may influence feeding behavior. Karpov and Cailliet (1978, 1979) found that crustaceans and cephalopod fragments were ingested at higher frequencies on spawning grounds than on non-spawning grounds. Inshore versus offshore samples of squid indicated differences in diet composition. In deeper waters, ~~euphasiids~~ euphausiids and copepods were dominant prey items, while true cannibalism (intake of whole cephalopods) and fish consumption dominated in shallow waters.

2.4.2.2.7.2. 2.1.6.2 **Market Squid as Forage**

Market squid are an integral part of the food web to many marine ~~vertebrates. organisms.~~ A meta-analysis of dietary studies in the CCE found market squid in the diet of 51 predators (Szoboszlai et al. 2015). Fish, seabirds, and marine mammals all ~~utilize~~ consume squid as a prey item. ~~as does the Humboldt squid (*Dosidicus gigas*) (Stewart et al. 2014). Bat stars (*Patiria miniata*), Kelle's whelks (*Kelletia kelletii*), and chestnut cowries (*Cypraea spadicea*) have also been observed to eat market squid eggs (Zeidberg et al. 2004).~~

Squid has been documented as ~~an important~~ a prevalent dietary component of ~~the sea otter, northern elephant seal, northern fur seal,~~ California sea lion (Lowry and Carretta 1999), Dall's porpoise, Pacific striped dolphin, Risso's dolphin, toothed whales such as the short-finned pilot whale (Hacker 1992), the sperm whale, and the bottlenose whale (Fields 1965). ~~In addition, seabirds such as the common murre, ashy storm petrel, black storm petrel, fork tailed storm petrel, and rhinoceros auklets feed on market squid-~~ marine mammals (Sinclair 1992; Fields 1965) and seabirds (Morejohn et al. 1978). In Monterey Bay, 19 species of fish were found to feed ~~upon~~ on market squid, including many commercially ~~important~~ fished species such as Pacific bonito, (*Sarda chiliensis*), salmon, halibut, and tuna (Figure 2-2) (Fields 1965; Morejohn et al. 1978) ~~(Figure 2-2). These fishes include all depleted,~~

threatened, and endangered salmon stocks along the coast. In fact predators). Predators from many trophic levels utilize/consume both small pelagic fishes, such as northern anchovy and Pacific sardine, and market squid as either a primary or supplementary food source (Table 2-1).

Figure 2-2. Food web for market squid, *Loligo opalescens*, involving commercially important or abundant fish, birds, and marine mammals (from Morejohn, et al. 1978).

Understanding how an ecosystem functions requires information on the trophic relationships of key species, including squid (May et al. 1979, Sydeman et al. 1997, Furness and Tasker 2000). Under MLMA, the Department must consider ecosystem impacts of a fishery, namely the conservation of not only the exploited species, but the other species that depend on that resource. In order to assess these fishery impacts on other species that also compete for that resource it is necessary to know how much that competitor depends on that resource. In fisheries which target lower trophic levels, such as market squid or sardines, natural predators are often thought of as competitors for the fishery resource (May et al. 1979, Dayton et al. 2002). At present, we do not have a complete understanding of the dynamics of many of these trophic relationships for squid; therefore, as additional research becomes available it will be incorporated into the MSFMP to better manage this fishery.

Table 2-1. Known predators of coastal pelagic species, including market squid. (From Table 1.1.2-1, Federal CPS FMP; Table 7A from CDFG Report to the Legislature).

Common Names	Scientific Names	Common Names	Scientific Names
MARINE MAMMALS	--	MARINE BIRDS	--
Northern fur seal	<i>Callorhinus ursinus</i>	Black-footed albatross	<i>Phoebastria nigripes</i>
Guadalupe fur seal*	<i>Arctocephalus townsendi</i>	Northern fulmar	<i>Fulmarus glacialis</i>
Steller sea lion	<i>Eumetopias jubatus</i>	Sooty shearwater	<i>Ardenna grisea</i>
California sea lion	<i>Zalophus californianus</i>	Manx shearwater	<i>Puffinus puffinus</i>
Northern elephant seal	<i>Mirounga angustirostris</i>	Short-tailed shearwater	<i>Ardenna tenuirostris</i>
Harbor seal	<i>Phoca vitulina</i>	Pink-footed shearwater	<i>Ardenna creatopus</i>
Common dolphin	<i>Delphinus delphis</i>	Leach's storm petrel	<i>Hydrobates leucorhous</i>
Harbor porpoise	<i>Phocoena phocoena</i>	Ashy storm petrel*	<i>Hydrobates homochroa</i>
Dall's porpoise	<i>Phocoenoides dalli</i>	Black storm petrel	<i>Hydrobates melania</i>
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	Brown pelican*	<i>Pelecanus occidentalis</i>
Common? Bottlenose dolphin	<i>Tursiops truncatus</i>	Double-crested cormorant	<i>Nannopterum auritum</i>
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	Brandt's cormorant	<i>Urile penicillatus</i>
Blue whale*	<i>Balaenoptera musculus</i>	Pelagic cormorant	<i>Urile pelagicus</i>
Fin whale*	<i>Balaenoptera physalus</i>	Glaucous-winged gull	<i>Larus glaucescens</i>
Sei whale	<i>Balaenoptera borealis</i>	Western gull	<i>Larus occidentalis</i>
Common? Minke whale	<i>Balaenoptera acutorostrata</i>	Heermann's gull	<i>Larus heermanni</i>
North Pacific right whale*	<i>Eubalaena japonica</i>	Ring-billed gull	<i>Larus delawarensis</i>
Humpback whale*	<i>Megaptera novaeangliae</i>	California gull	<i>Larus californicus</i>
Gray whale	<i>Eschrichtius robustus</i>	Black-legged kittiwake	<i>Rissa tridactyla</i>
		Common murre	<i>Uria aalge</i>
		Pigeon guillemot	<i>Cepphus columba</i>

Common Names	Scientific Names
<u>Marbled murrelet*</u>	<u>Brachyramphus marmoratus</u>
<u>Craveri's murrelet</u>	<u>Synthliboramphus craveri</u>
<u>Scripps's murrelet**</u>	<u>Synthliboramphus scrippsi</u>
<u>Guadalupe murrelet**</u>	<u>Synthliboramphus hypoleucus</u>
<u>Ancient murrelet</u>	<u>Synthliboramphus antiquus</u>
<u>Cassin's auklet</u>	<u>Ptychoramphus aleuticus</u>
<u>Rhinoceros auklet*</u>	<u>Cerorhinca monocerata</u>
<u>Horned puffin</u>	<u>Fratercula corniculata</u>
<u>Tufted puffin*</u>	<u>Fratercula cirrhata</u>
<u>Bald eagle</u>	<u>Haliaeetus leucocephalus</u>
<u>Osprey</u>	<u>Pandion haliaetus</u>
<u>Elegant tern*</u>	<u>Thalasseus elegans</u>
<u>Caspian tern</u>	<u>Hydroprogne caspia</u>
<u>Forster's tern</u>	<u>Sterna forsteri</u>
<u>Least tern*</u>	<u>Sternula antillarum</u>
MARINE FISH	--
<u>Northern anchovy</u>	<u>Engraulis mordax</u>
<u>Pacific sardine</u>	<u>Sardinops sagax</u>
<u>Pacific whiting</u>	<u>Merluccius productus</u>
<u>Common thresher shark</u>	<u>Alopias vulpinus</u>
<u>Shortfin Mako shark</u>	<u>Isurus oxyrinchus</u>
<u>Southern shark</u>	<u>Galeorhinus galeus</u>
<u>Blue shark</u>	<u>Prionace glauca</u>
<u>Pacific electric ray</u>	<u>Torpedo californica</u>
<u>Silver (coho) salmon*</u>	<u>Oncorhynchus kisutch</u>
<u>King (Chinook) salmon*</u>	<u>Oncorhynchus tshawytscha</u>
<u>Steelhead*</u>	<u>Oncorhynchus mykiss irideus</u>

Common Names	Scientific Names
<u>Rockfish (many species)</u>	<u>Sebastes spp.</u>
<u>Striped bass</u>	<u>Morone saxatilis</u>
<u>Barred sand bass</u>	<u>Paralabrax nebulifer</u>
<u>Kelp bass</u>	<u>Paralabrax clathratus</u>
<u>Spotted sand bass</u>	<u>Paralabrax maculatofasciatus</u>
<u>Ocean whitefish</u>	<u>Caulolatilus princeps</u>
<u>Jack mackerel</u>	<u>Trachurus symmetricus</u>
<u>Yellowtail</u>	<u>Seriola dorsalis</u>
<u>White seabass</u>	<u>Atractoscion nobilis</u>
<u>Queenfish</u>	<u>Seriphus politus</u>
<u>California corbina</u>	<u>Menticirrhus undulatus</u>
<u>White croaker</u>	<u>Genyonemus lineatus</u>
<u>Surfperches (many species)</u>	<u>Embiotocidae</u>
<u>Pacific barracuda</u>	<u>Sphyrna argentea</u>
<u>Pacific (chub) mackerel</u>	<u>Scomber japonicus</u>
<u>Pacific bonito</u>	<u>Sarda chiliensis</u>
<u>Albacore</u>	<u>Thunnus alalunga</u>
<u>Pacific bluefin tuna</u>	<u>Thunnus orientalis</u>
<u>Swordfish</u>	<u>Xiphias gladius</u>
<u>Striped marlin</u>	<u>Kajikia audax</u>
<u>Giant seabass</u>	<u>Stereolepis gigas</u>
<u>Lingcod</u>	<u>Ophiodon elongatus</u>
<u>Scorpionfish</u>	<u>Scorpaena guttata</u>
<u>Dogfish</u>	<u>Squalus spp.</u>
INVERTEBRATES	--
<u>Market squid</u>	<u>Doryteuthis (Loligo) opalescens</u>
<u>Ocean squids</u>	<u>Family: Loliginidae</u>

* Endangered, threatened, or candidate species

** Updated in 2025; Split from Xantus's murrelet in 2012 due to genetics, morphological differences, and apparent lack of interbreeding at areas where the two are sympatric (Birt et. al 2012). Additionally, endangered, threatened, or candidate species.

The proportion of ~~the diet that~~ squid ~~makes up in~~ predators' diets varies dramatically between species, geographical location, and environmental conditions. Most squid predators are not squid specialists, ~~i.e.,~~ squid is rarely the sole prey item; ~~because of its highly variable abundance,~~ squid cannot be relied on as a stable food source, ~~additionally, it has~~ because of its highly variable abundance and limited energetic value (O'Dor and Webber 1986). Therefore, squid predators often ~~must~~ switch to more abundant or energetically profitable prey species (Ainley et al. 1996; Sydeman et al. 1997), or target squid when they are most abundant during spawning aggregations and minimal energy is needed for capture.

In terms of frequency-of-occurrence, the presence of squid in diets varies dramatically. For seabirds such as the common murre, (Uria aalge), squid

composes 6- ~~to~~ 20% of the diet (by weight) depending on season, and is usually ranked 3rd or 4th after northern anchovy, Pacific herring, and shiner surfperch (*Cymatogaster aggregata*) (Ainley, et al. 1996). ~~In terms of frequency of occurrence, the presence of squid varies dramatically.~~ For diving birds such as ~~rhinoceros~~ rhinoceros auklets, (*Cerorhinca monocerata*), common murres, ~~artic~~ Artic loons, (*Gavia arctica*), and Brandt's cormorants, (*Phalacrocorax penicillatus*), the frequency-of-occurrence of squid in the diet can range from 33- ~~to~~ 85% (Baltz and Morejohn 1977). For plunging, surface feeding birds, such as shearwaters and gulls, the frequency-of-occurrence ranges from 0-67% (Baltz and Morejohn 1977).

Market squid are ~~important as forage to a long list of fish and they serve as an important food source also prey for many larger pelagic fish that are commercially and recreationally important~~ commercial and recreational fishes, such as white seabass, (*Atractoscion nobilis*), yellowtail, (*Seriola dorsalis*), kelp bass, (*Paralabrax clathratus*), barred sand bass, ~~California~~ (*Paralabrax nebulifer*), Pacific barracuda, (*Sphyraena argentea*), California halibut, (*Paralichthys californicus*), and other nearshore species.

For ~~chinook~~ Chinook salmon, (*Oncorhynchus tshawytscha*), squid composed ~~only~~ 7- ~~to~~ 9% of diet (by volume) and ranked 3rd or 4th behind northern anchovy, ~~euphausiid~~ euphausiids, and juvenile rockfish depending on location, ~~Monterey or San Francisco, respectively~~ (Morejohn et al. 1978). At other locations along the west coast, squid is not ~~an important~~ a significant Chinook salmon prey item ~~for chinook~~ since they prey mainly on fish (Groot and Margolis 1991). ~~In~~ For chilipepper rockfish, (*Sebastes goodei*), squid ranked 3rd behind juvenile rockfish and other fishes (Morejohn et al. 1978). Other fish predators in which squid ranked high as a prey item ~~includes~~ include mainly bottom dwelling species ~~including~~ such as curlfin turbot, sole (*Pleuronichthys decurrens*), speckled ~~and Pacific sanddabs,~~ sanddab (*Citharichthys stigmaeus*), Pacific sanddab (*Citharichthys sordidus*), lingcod, (*Ophiodon elongatus*), petrale sole, (*Eopsetta jordani*), and Pacific halibut (*Hippoglossus stenolepis*) (Morejohn et al. 1978). Several pelagic species also feed on squid when available such as blue shark, (*Prionace glauca*), common thresher shark, (*Alopias vulpinus*), and albacore tuna (*Thunnus alalunga*) (Morejohn et al. 1978).

~~For the~~ Squid occurs in 35 to 44% of California sea lion, ~~squid occurs in 35-44% of~~ (*Zalophus californianus*) scat samples collected at rookery sites in the ~~Southern California Bight~~ SCB, which can represent volumes as high as 27% of the diet by weight in non-El Niño years and 16% in El Niño years (Lowry and Carretta 1999). In terms of prey rank, squid was either the primary or secondary ~~sea lion~~ prey item after northern anchovy, depending on location and environmental conditions. ~~During an El Niño event, the presence of market squid in California sea lion and Pacific harbor seal scat~~

~~samples decreased more than three fold as compared to non El Niño periods (Henry 1997, Lowry and Carretta 1999).~~

~~Consumption estimates are known for some squid predators, although these can vary dramatically because squid availability changes with location and environmental conditions. For example, sea lions in southern California have been estimated to consume 68,000 tons of squid in non El Niño years and 30,000 tons in El Niño years (STAR Panel Working Paper #4, Appendix E). Dr. William Gilly estimated that three species, California sea lion, Dall's porpoise, and Risso's dolphin combined consume 125,000 tons of squid annually (pers. comm.). The changing availability of squid also affects potential predators. Short finned pilot whales, blue sharks, and Pacific bonito increase their consumption of market squid during the squid spawning season. It has been suggested that short finned pilot whales in the Southern California Bight (Hacker 1992, Millera diverse diet and are opportunistic feeders suggesting that an individual can fulfill intake needs by combining multiple prey sources when one energy taxa is absent (Fiechter et al. 1983, Dohl et al. 1980) and blue sharks near Santa Catalina Island (Tricas 1979) may move inshore as the squid spawning season begins. Pacific bonito consumption of squid is influenced by the shoaling behavior of squid spawning in nearshore waters of southern California (Oliphant 1971). 2016).~~

~~Seasonal landings of market squid in southern California ports have been strongly correlated with percent frequency of occurrence in sea lion diets (Figure 2-3). In El Niño years, resource availability is low for all species. In non El Niño years, squid appears to be serving as adequate forage for sea lions, even with high levels of fishing activities, as sea lion pup production or population trends do not appear to be affected. As a result of the 1998 El Niño, sea lion pup production at the Channel Islands declined 64% (Carretta et al. 2002). However in 1999, pup production increased by 185% resulting in the highest net productivity rate observed in sea lions for the past 20 years (Carretta et al. 2002). During that same period, commercial squid landings in California were the highest on record (126,772 tons) with over 99% of those landings coming from southern California. In recent years, concurrent with squid landings in excess of 100,000 tons annually, the sea lion population in California continues to increase at a rate of 5.4-6.1% per year (Carretta et al. in prep).~~

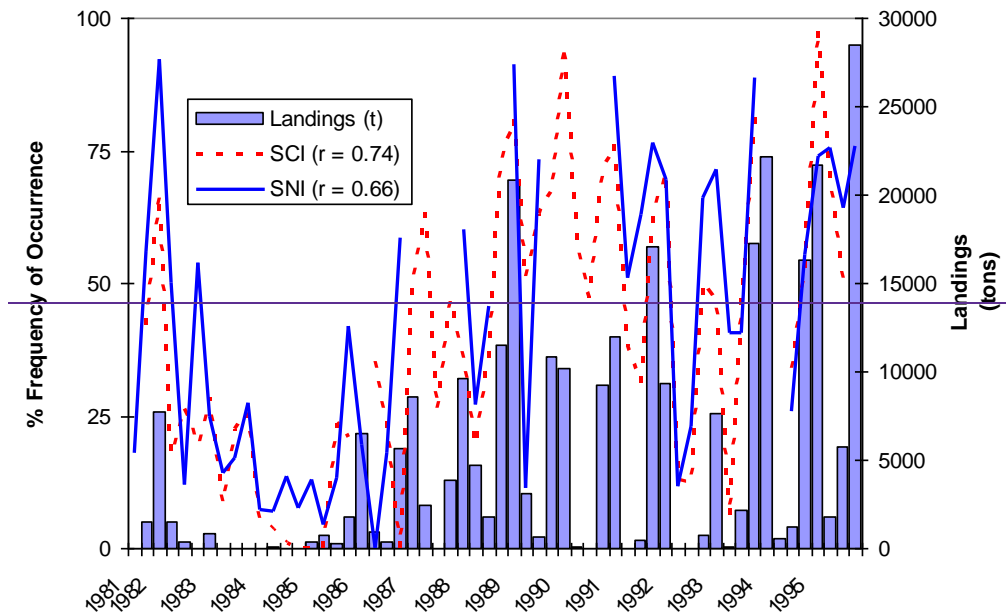


Figure 2-3. Seasonal Comparison of Sea Lion Scat Squid Frequency of Occurrence at San Clemente (SCI) and San Nicholas Islands (SNI) vs Squid landings in Southern California Ports (from Lowry and Carretta 1999)

Fishery-independent data suggest that squid distribution is widespread, fishing does not occur in all areas of distribution, and not all spawning grounds are targeted. Historical evidence from research cruises along the west coast, as well as recent catch data, suggests that squid biomass may be very large at times and distributed widely along the entire west coast (Groundfish Triennial Bottom Trawl Survey, Midwater trawl surveys, Kenny Mais survey, etc., STAR Panel Working Paper #5A California Current Integrated Ecosystem Assessment), suggesting that a large portion of the squid biomass is available to other trophic levels (Figure 2-4).3).

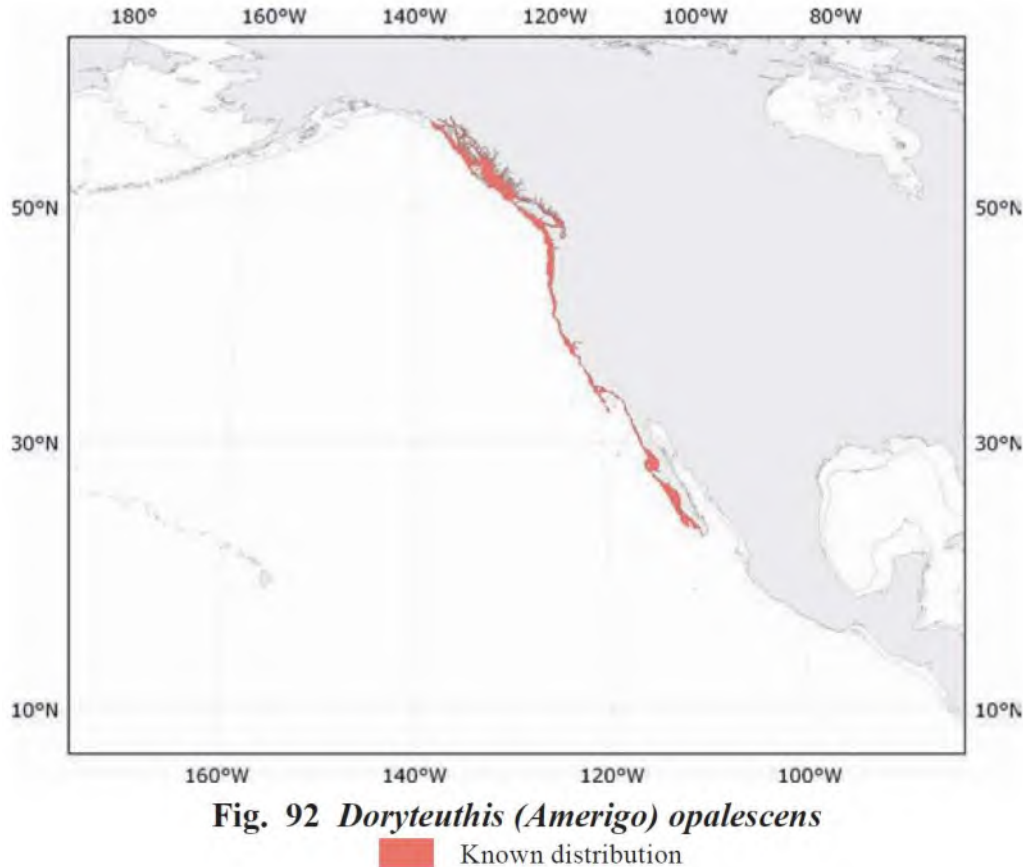


Figure 0-2

Figure 2-4. Expanding symbol plots of distribution and abundance of *Loligo opalescens* juveniles collected as part of the by-catch in the summer triennial groundfish survey conducted by NOAA Fisheries/NWFSC (from Reiss et al. in submission).

As briefly identified above, market squid, along with anchovy and sardine, are important as forage to predators at many trophic levels. Although it is not currently possible to estimate the total amount of squid used as forage in the California Current ecosystem or the size of squid populations necessary to sustain predator populations, the MSFMP contains the goal of providing adequate forage for dependent species. This goal is implemented through management measures that reserve a portion of the biomass as forage for all dependent species using such tools as fishery control rules and harvest replenishment areas.

Table 2-1. Known fish, bird, mammal and invertebrate predators of coastal pelagic species, including market squid. (Table 1.1.2-1 from Federal Coastal Pelagic Species FMP; Table 7A from CDFG Report to the Legislature).

MARINE BIRDS

MARINE FISH

Table 2-1. Known fish, bird, mammal and invertebrate predators of coastal pelagic species, including market squid. (Table 1.1.2-1 from Federal Coastal Pelagic Species-FMP; Table 7A from CDFG Report to the Legislature).

MARINE MAMMALS		
Northern fur seal	Black-footed albatross	Northern anchovy
Guadalupe fur seal*	Fulmar	Pacific sardine
Steller sea lion	Sooty shearwater	Pacific whiting
California sea lion	Manx shearwater	Common thresher shark
Northern elephant seal	Short-tailed shearwater	Bonito shark
Harbor seal	Pink-footed shearwater	Southern shark
Common dolphin	Leach's Storm petrel	Blue shark
Harbor porpoise	Ashy Storm petrel*	Pacific electric ray
Dall's porpoise	Black Storm petrel	Silver (coho) salmon*
Pacific white-sided dolphin	Brown pelican*	King (Chinook) salmon*
Bottlenose dolphin	Double-crested cormorant	Steelhead*
Pilot whale	Brandt's cormorant	Rockfish (many species)
Blue whale*	Pelagic cormorant	Striped bass
Fin whale*	Glaucous-winged gull	Barred sand bass
Sei whale	Western gull	Kelp bass
Minke whale	Heerman's gull	Spotted sand bass
Pacific right whale*	Ring-billed gull	Ocean whitefish
Humpback whale*	California gull*	Jack mackerel
California gray whale	Black-legged kittiwake	Yellowtail
	Common murre	White seabass
	Pigeon guillemot	Queenfish
INVERTEBRATES	Marbled murrelet*	California corbina
Market squid	Craveri's murrelet	White croaker
Ocean squids	Xantus's murrelet*	Surfperches (many species)
	Ancient murrelet	California barracuda
	Cassin's auklet	Pacific (chub) mackerel

Table 2-1. Known fish, bird, mammal and invertebrate predators of coastal pelagic species, including market squid. (Table 1.1.2-1 from Federal Coastal Pelagic Species FMP; Table 7A from CDFG Report to the Legislature).

Rhinoceros auklet*	Pacific bonito
Horned puffin	Albacore
Tufted puffin*	Bluefin tuna
Bald eagle	Swordfish
Osprey	Striped marlin
Elegant tern*	Giant seabass
Caspian tern	Lingcod
Forster's tern	Scorpionfish
Least tern*	Dogfish

* = endangered, threatened, or candidate species

2.1.7. Range of market squid (Reproduced from Jereb et al. 2010).

2.4.3.2.7.3. **Competition**

Market squid feed with a variety of coastal pelagic fish finfish species, namely anchovies, sardines, herring, and mackerel. They Market squid are often found together in commercial catch targeting these species; however, there is little information is available regarding the actual competition for resources. Dense spawning aggregations of market squid may result in an increased incidence of cannibalism (Karpov and Cailliet 1978).

Trophic interactions between squid and higher-trophic-level fish are poorly still not fully understood. Among coastal pelagic finfish species (sardines, anchovies, and mackerel), it is not known if the value of market squid as a food source to adult coastal pelagic finfish predators outweighs the negative effects of predation by squid on larvae and juveniles of predator fish those species plus, in addition to competitive removal of phytoplankton, zooplankton and other fish.

2.5.2.8. 2.1.8 **Critical Habitat**

The description and identification of Essential Fish Habitat (EFH) for market squid is generalized because data are incomplete for this species. was updated through the federal fishery management process in 2023. The CPS

FMP describes the east-west geographic boundary ~~to be all marine and estuarine waters~~ from the shoreline along the California, Oregon, and Washington coast offshore to the limits of the ~~exclusive economic zone (EEZ)~~ and above the thermocline, where sea surface temperatures range between ~~50–79°F, the upper tolerance 44–75°F (7–24°C)~~. This definition includes U.S. waters of ~~CPS finfish~~ Puget Sound and the Salish Sea and excludes other estuarine waters on the Pacific Coast. Market squid EFH also includes soft, sandy substrates 13 m to 93 m (43 ft to 305 ft) of depth for spawning adults and the egg capsule stage.

Market squid inhabit the inshore and offshore waters of the California Current from British Columbia to Baja California. The California Current is a region of transport, coastal jets, divergence, and upwelling. Changes in the Pacific Basin atmospheric pressure systems result in seasonal and interannual environmental variability within the ~~California Current ecosystem, CCE~~. Variations are caused by local winds and Ekman transport, flows of the equatorward California Current, the poleward undercurrent, and the inshore countercurrent. Temporal variations associated with the California Current are on time scales of several years to decades [i.e., the El Niño Southern Oscillation (ENSO) and cold vs. warm water regimes]. ENSO and other temperature related events markedly alter flow and temperature of currents within the ~~California Current system CCE~~.

Refuges, preserves and ~~marine sanctuaries (now termed marine protected areas and marine managed areas due to recent legislation)~~ MPAs are areas that are legally defined and regulated by the state or federal government, with the primary intent of managing areas for their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities. National marine sanctuaries specifically prohibit exploring for, developing, or producing oil, gas, or minerals within their boundaries. ~~Two~~ Three national marine sanctuaries, the Channel Islands National Marine Sanctuary, Chumash Heritage National Marine Sanctuary and the Monterey Bay National Marine Sanctuary encompass the main fishing areas for market squid.

Non-spawning market squid are pelagic and believed to be associated with the deep scattering layer that migrates vertically to the upper levels of the water column at night. ~~Spawning squid concentrate in dense schools near spawning grounds, but habitat requirements for spawning are not well understood.~~ Spawning occurs over a wide depth range, but the extent and significance of spawning in deep water are unknown. Known market squid spawning grounds are characterized by a sandy substrate in shallow waters; major spawning grounds fished in California are located in Monterey Bay and near the Channel Islands. Egg cases ~~are most often deposited at depths~~

between 18 and 55 m (CDFG–NOAA Fisheries unpublished data), but have been found at depths of 792 m– (2,598 ft). Adults and juveniles prefer oceanic salinities and are most abundant between temperatures of 50–60°F (10–16°C) (Roper and Sweeney 1984).

~~2.6.2.9.~~ **2.1.9 Status of the Stocks**

Market squid population dynamics are poorly understood. ~~Although~~ some information exists on the coastwide distribution and abundance of market squid from fishery-independent midwater and bottom trawl surveys aimed at assessing other species, ~~there is no good measure of annual recruitment success beyond information obtained from the fishery.~~ Because fishing activity occurs only on shallow-water spawning aggregations, it is not apparent if landings reflect availability to the fishery, or overall stock size, since squid have been documented at greater depths using other gear.

Historically, the squid resource was considered to be underutilized. Until improved estimates of abundance are available, the true status of the population will remain unknown. The CPS FMP required that MSY be established for all species in the plan (PFMC 2023). Setting MSY for market squid has proven problematic because an accurate biomass has yet to be determined. Hence, the PFMC approved the use of egg escapement as a proxy for MSY for the market squid fishery. Egg escapement is the number (or proportion) of a female squid's potential lifetime fecundity that she is able to spawn, on average, before being taken in the fishery. The MSY control rule for market squid is founded generally on conventional spawning biomass “per recruit” model theory (Gabriel et al. 1989; Macewicz et al. 2004). Specifically, the MSY control rule for market squid is based on evaluating levels of egg escapement associated with the exploited population. The estimates of egg escapement are evaluated in the context of a “threshold” that is believed to represent a minimum level that is considered necessary to allow the population to maintain its level of abundance into the future (e.g., allow for “sustainable” reproduction year after year) (PFMC 2023). The threshold is currently set to a level of egg escapement of at least 30%. Egg escapement is reported in the reported in the Department's online Market Squid Enhanced Status Report (<https://marinespecies.wildlife.ca.gov/market-squid/management/>)

~~Historically, the squid resource was considered by some to be underutilized. Until improved estimates of abundance are available, the true status of the population will remain unknown. In 1998, a cooperative scientific research program between the Department and NOAA Fisheries was initiated and efforts to model the population began. This program may eventually give rise to a more thorough and detailed stock assessment similar to those for other coastal pelagic species.~~

~~2.1.10).~~

Therefore, the Overfishing Fishing Limit and Acceptable Biological Catch for market squid are an F_{MSY} proxy resulting in egg escapement $\geq 30\%$. The egg escapement model, as a proxy for MSY, was intended to be a temporary measure until an acceptable biomass estimate could be determined for market squid. Since an accurate biomass estimate has not yet been developed for market squid, NOAA and the Department continue to improve and refine the egg escapement method (Dorval et al. 2024).

Notably, the California market squid fishery has been certified as sustainable by the Marine Stewardship Council (MSC), an independent international non-profit organization with a mission to end overfishing and ensure seafood is fished sustainably (MSC 2023). The MSC uses a comprehensive standard and review process, which engages industry participants, external scientists, and management agencies to determine whether a fishery can be certified as sustainable. The review concluded that the basis of the proxy indicator used to assess stock status (egg escapement monitoring) is well established, and appropriate for the biology of the stock. The review found that ecological monitoring is broad in scope, and a great deal of quantitative information is available showing that the fishery is highly unlikely to disrupt ecosystem structure and function under present conditions. The review also noted that the combination of gear and fishing methods is selective and allows larger animals to be released alive, thus limiting the impacts to endangered, threatened, or protected species. Finally, the review concluded that the market squid fishery exhibits an effective legal system and framework for cooperation that is transparent in its process, and with the roles and responsibilities of those involved in the fishery's management.

2.7.2.10. Areas Involved

~~There are two~~Two major fishery areas account for the majority of landings in California. The northern fishery is centered in Monterey Bay, and squid are landed primarily at Monterey and Moss Landing. The northern fishery ~~operates~~has operated predominately within a half -mile of the Monterey Bay shoreline-, and has expanded to other areas of the bay. The southern fishery targets a multitude of fishing spots including the Channel Islands and coastal areas from Point Conception south to La Jolla. Squid are landed chiefly at the ports of Ventura, Port Hueneme, San Pedro, and Terminal Island.

2.8.2.11. 2.2 History of Exploitation

The commercial fishery has a long history in California, dating back to the mid- nineteenth century, although annual catches were usually less than 10,000 short tons (tons) until the 1960s (Table 2-2). During the 1980s, California's squid fishery grew rapidly in fleet size and landings when

international demand for squid increased due to declining squid fisheries in other parts of the world (CDFG ~~2001c~~, 2001). In 1997, a permit was created for the squid fishery and the rapid growth of fleet size was halted by a moratorium on new permits. Although it is not known when recreational fisheries in California started to use market squid as bait, ~~it is recreational fisheries~~ currently ~~used~~use market squid as either live or dead bait ~~for recreational fisheries~~ throughout the state.

Table 2-2. Historical market squid landings in tons for California divided at Point Conception into north and south. The market squid season is from 1 April through 31 March of the following year (MLDS).

Table 2-2. Historical market squid landings in tons for California divided at Point Conception into northern and southern fisheries. The market squid season is from 1 April through 31 March of the following year. Source: CDFG Landing Receipts.				Table 2-2. Historical market squid landings in tons for California divided at Point Conception into northern and southern fisheries. The market squid season is from 1 April through 31 March of the following year. Source: CDFG Landing Receipts.			
Season	Northern-fisheryNorth	Southern-fisherySouth	TotalLandings	Season	Northern-fisheryNorth	Southern-fisherySouth	TotalLandings
1927-1928	1,567	4	1,571	1971-1972	8,328	4,475	12,803
1928-1929	686	44	730	1972-1973	6,124	5,057	11,181
1929-1930	2,303	16	2,319	1973-1974	621	7,696	8,317
1930-1931	5,494	16	5,510	1974-1975	7,248	5,302	12,550
1931-1932	792	71	863	1975-1976	2,495	10,563	13,058
1932-1933	2,072	28	2,100	1976-1977	2,511	6,587	9,098
1933-1934	430	4	434	1977-1978	2,235	12,050	14,285
1934-1935	736	19	755	1978-1979	10,343	8,680	19,023
1935-1936	329	19	347	1979-1980	14,169	7,213	21,382
1936-1937	451	17	469	1980-1981	7,860	12,087	19,947
1937-1938	245	61	306	1981-1982	14,132	11,700	25,832
1938-1939	754	11	765	1982-1983	11,697	1,516	13,213
1939-1940	522	53	575	1983-1984	1,061	27	1,088
1940-1941	818	86	904	1984-1985	549	804	1,353
1941-1942	694	47	741	1985-1986	4,276	10,100	14,376
1942-1943	406	34	440	1986-1987	6,967	18,636	25,603
1943-1944	4,529	18	4,546	1987-1988	6,632	18,582	25,214
1944-1945	5,435	38	5,472	1988-1989	5,765	42,430	48,195
1945-1946	7,586	27	7,613	1989-1990	7,829	25,222	33,051
1946-1947	19,777	18	19,795	1990-1991	8,871	23,602	32,473
1947-1948	8,728	64	8,792	1991-1992	9,013	29,653	38,666
1948-1949	7,599	59	7,658	1992-1993	9,450	9,343	18,793
1949-1950	3,087	2	3,089	1993-1994	10,012	44,440	54,452
1950-1951	2,997	2	2,999	1994-1995	19,103	44,489	63,592
1951-1952	5,844	374	6,219	1995-1996	3,676	90,157	93,833
1952-1953	1,746	2,649	4,394	1996-1997	5,828	118,481	124,309
1953-1954	2,076	391	2,467	1997-1998	9,275	1,623	10,898
1954-1955	3,772	77	3,849	1998-1999	26	11,673	11,699
1955-1956	6,714	119	6,833	1999-2000	308	126,464	126,772
1956-1957	9,828	478	10,306	2000-2001	7,730	115,681	123,411
1957-1958	5,496	1,753	7,249	2001-2002	10,094	92,621	102,715
1958-1959	1,902	2,848	4,750	2002-2003	27,828	19,166	46,994
1959-1960	7,140	94	7,235				
1960-1961	1,103	996	2,099				
1961-1962	1,987	4,075	6,062				
1962-1963	2,886	2,028	4,914	2003-2004	19,673	40,803	60,476
1963-1964	3,174	1,641	4,815	2004-2005	7,303	49,270	56,572
1964-1965	4,551	5,223	9,774	2005-2006	2,206	79,902	82,108
1965-1966	4,439	4,508	8,947	2006-2007	630	37,736	38,366
1966-1967	5,597	4,211	9,808	2007-2008	35	50,600	50,635
1967-1968	5,617	6,088	11,705	2008-2009	923	39,223	40,146
1968-1969	7,289	2,668	9,957	2009-2010	967	92,637	93,604
1969-1970	5,780	6,186	11,966	2010-2011	23,568	110,074	133,642
1970-1971	4,314	8,861	13,175	2011-2012	17,061	117,957	135,018

2012-2013	21,360	84,727	106,087
2013-2014	27,607	87,494	115,101
2014-2015	63,731	50,841	114,573
2015-2016	22,324	18,283	40,607
2016-2017	15,037	27,360	42,397
2017-2018	10,934	62,768	73,702
2018-2019	15,780	18,491	34,271

2019-2020	3,066	12,147	15,213
2020-2021	16,865	3,904	20,768
2021-2022	23,785	39,069	62,854
2022-2023	4,679	51,700	56,379
2023-2024*	1,090	28,678	29,768

*Preliminary data.

2.8.1.2.11.1. Description of User Groups

2.8.1.1.2.11.1.1. 2.2.1.1 Commercial Fishery

California's market squid fishery began in 1863; Chinese immigrants harvested small quantities of squid from Monterey Bay (Dickerson and Leos 1992). Skiffs were used to encircle a net around another skiff that used a torch to attract the squid to the surface. The product was dried and exported to China. In 1905, Italian immigrant fishermen introduced the more efficient lampara net. The lampara net (Table 2-3) was the only legal form of round haul gear in the southern bight of Monterey Bay until 1989. Once purse and drum seines were legalized for use in this district, the squid fleet switched gear types and the lampara became obsolete. In [CDFG Fishing Districts 16 and 17](#) (Monterey and Santa Cruz Counties), attracting lights were prohibited between 1959 and 1988; in 1989 lights were again allowed in the northern fishery. ~~Catch Landings~~ in the northern fishery had not expanded ~~in terms of volume or location~~ until the 2002-2003 season. ~~Excluding El Niño events, the number of vessels participating in the northern fishery landing greater than two tons daily of market squid has remained relatively constant (Figure 2-5), while the number of vessels increased in the 1990s making landings has fluctuated from year-to-year (Figure 2-6). 4).~~

Table 2-3. Description of market squid fishery gear types.

Gear type	Description
Purse seine	A round haul net with a "purse" line to close the bottom of the net. One end is attached to a skiff and the deploying vessel encircles the squid. The other end of the net is brought to the deploying vessel and the purse line is drawn, closing the bottom of the net to prevent escaping squid.
Drum seine	Like a purse seine, but a large drum stores, deploys and retrieves the net.
Lampara	A round haul net with the sections of netting made and joined to create bagging. The net is pushed beneath squid to encircle it from each side. The "wings" of the net are pulled back to the boat and the squid end up in the bag portion of the net. This gear has no arrangement for pursing.
Brail	A large dip net sometimes used with the assistance of the vessel's hydraulics.

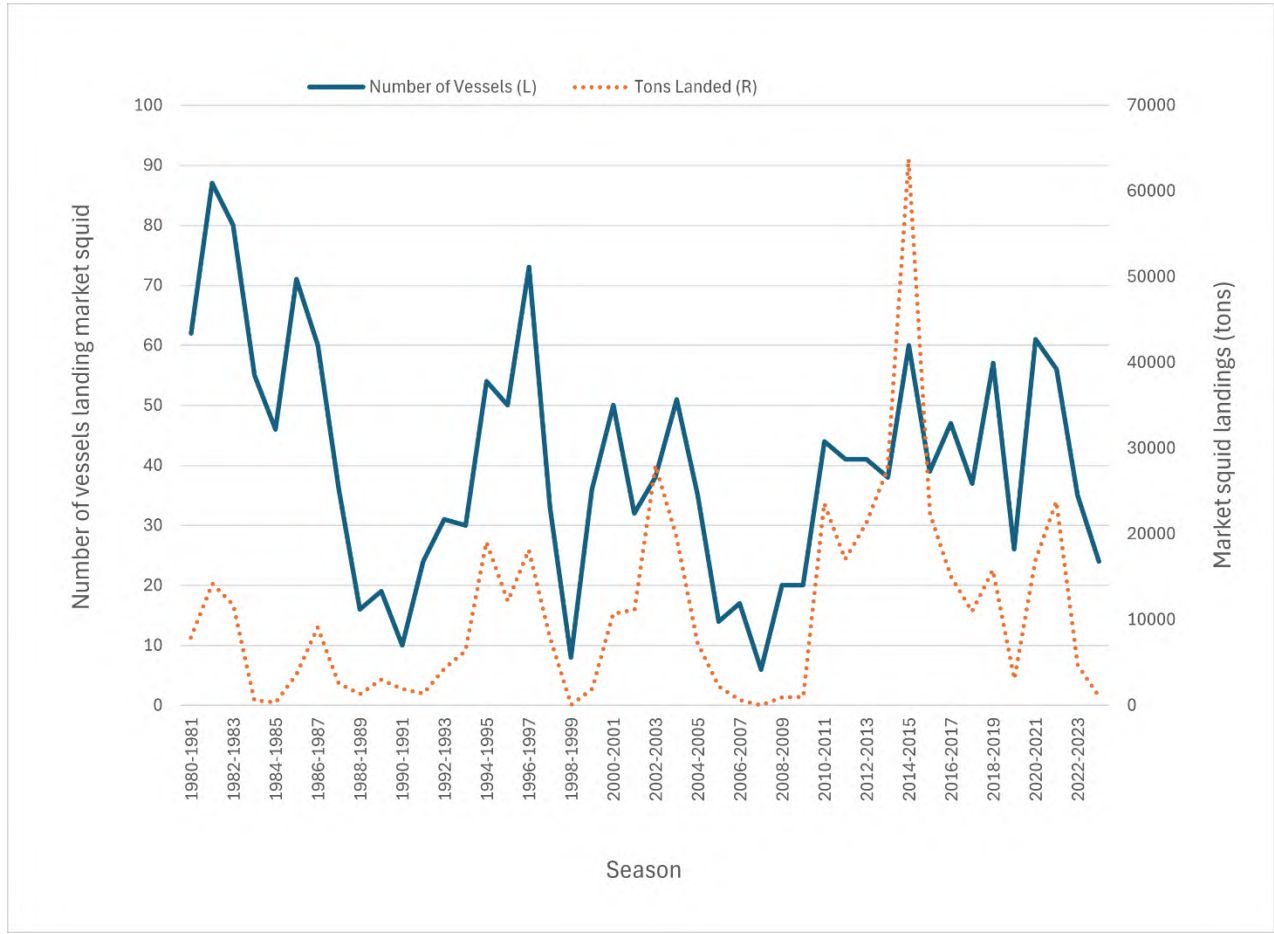


Figure 0-3. Number of vessels and market squid landings by season for Northern California (MLDS).

During the 1970s brail vessels were the major harvesters in the southern California market squid fishery, using a power-assisted brail or dip net in conjunction with attracting lights (Kato and Hardwick 1975). In 1977, the fleet shifted from using brail vessels to purse seine vessels (Vojkovich 1998). Vessels brailing for squid still land a small portion of the catch (less than 23.0% in 2000-2001-2023-2024 season). These Brailing vessels have the advantage of fishing in some areas that are closed to roundhaul gear and can land smaller volumes at a higher value. However, purse seine and drum seine vessels are more effective at landing large volumes of squid and by the early 1990s, the purse seine became the dominant gear on the entire coast, with the drum seine gaining popularity by the mid-1990s (Figure 2-7). As of the 2023-2024 season, purse and drum seine remain the dominant gear responsible for 97% of total landings (MLDS).

Figure 2-5. Number of vessels and market squid landings by season for Northern California. Source: CDFG Landing Receipts; note: data for 2002-2003 season is preliminary.

According to Department records during the drafting of the MSFMP, the average purse seine vessel length is was 18.9 m (62 ~~feet~~ft) and 81 gross tons. The average hold capacity is 84 tons. ~~During the past three years, over two-thirds of the fleet (70%) used a purse seine, 23% used a drum seine and 4% used brail gear. Nearly all vessels use side-scan sonar and fathometers. The average vessel power is 428 HP and auxiliary power is 148 HP. Most vessels (82%) use was 84 tons. The average purse seine net was 381 m (1250 ft) long with a depth of 48 m (156 ft). Gross tonnage (GT) is a volumetric measurement used as a proxy for harvesting capacity. At the start of the 2024 squid fishing season, the average seiner was 18.4 m (60.28 ft) in length with an average GT of 83.6 tons. The average light and brail boat length was 13.5 m (44.4 ft) with an average GT of 46.5 tons for brail boats. The stretched mesh size is 1 ¼ - 1 ½ inch. Some vessels use refrigerated seawater to keep their catch cold, while others (live bait vessels) use circulated seawater, brine or no cooling system at all. The average purse seine net is 381 m (1250 feet) long with a depth of 48 m (156 feet). The stretched mesh size is one inch. The fleet currently uses a combination of round haul gear (purse seine or drum seine) or brail/dip net to harvest squid. Lampara nets, a legal round haul gear, are mostly obsolete in the limited entry fishery. In the 2023 squid fishing season (April 1, 2023 to March 31, 2024), approximately 97% of directed landings (by weight) came from seine (purse or drum) fishing, and less than 3% from brail/dip net fishing. Nearly all vessels use side-scan sonar and fathometers.~~

In most cases, squid seiners work with light boats. A light boat is typically a smaller vessel with several high-powered lights located at various levels around the vessel. The purpose of the lights is to attract and aggregate spawning squid to surface waters. The light boat actively searches for squid. Once squid are located and aggregated, the light boat will signal the seiner to deploy its net, encircling the light boat, ~~in order~~ to catch the squid located under the lights.

~~According to logbook records, the average light boat is 11.8 m (39 feet) in length with a gross tonnage of 19 tons. Wattage for the squid attracting lights averages approximately 22,500 watts (30,000 watts is the legal maximum). Nearly all light boats use side-scan sonar and fathometers. Light boat power and auxiliary power average 379 HP and 63 HP, respectively.~~

~~Squid fishing supplements the income of the many seine vessels from southern California that also participate is often supplemented by participation in the tuna and CPS finfish fisheries. Many vessels in the southern fishery have homeports in the states of Alaska, Washington and Oregon and participate in salmon, herring and sardine fisheries in these other states. In recent years. Historically, some vessels from the squid fishery participated in a~~

high value sardine fishery off the Columbia River at the border of Oregon and Washington. Many light boats also participate in other local fisheries that do not use attracting lights such as herring, hook- and-line and gillnet. Declines in other fisheries led to an influx of fishing vessels from other states in the 1990s. Some fishermen have complained about user conflict and territorial disputes between "local" and out-of-state fishermen. Non-permitted vessels, including vessels in other fisheries (such as trawlers) that periodically catch small volumes of squid, are allowed to make incidental landings of up to two tons daily (Table 2-4).

The number of businesses purchasing squid has remained constant since the early 1980s (mean = 54; range 41–86), however, since the 1994–1995 season, the majority (80% or more) of the squid purchased was bought by nine or fewer dealers. The majority (approximately 72%) of the dealers purchase less than 100 tons per year.

Figure 2-6. Number of vessels and market squid landings by season for Southern California. Source: CDFG Landing Receipts.

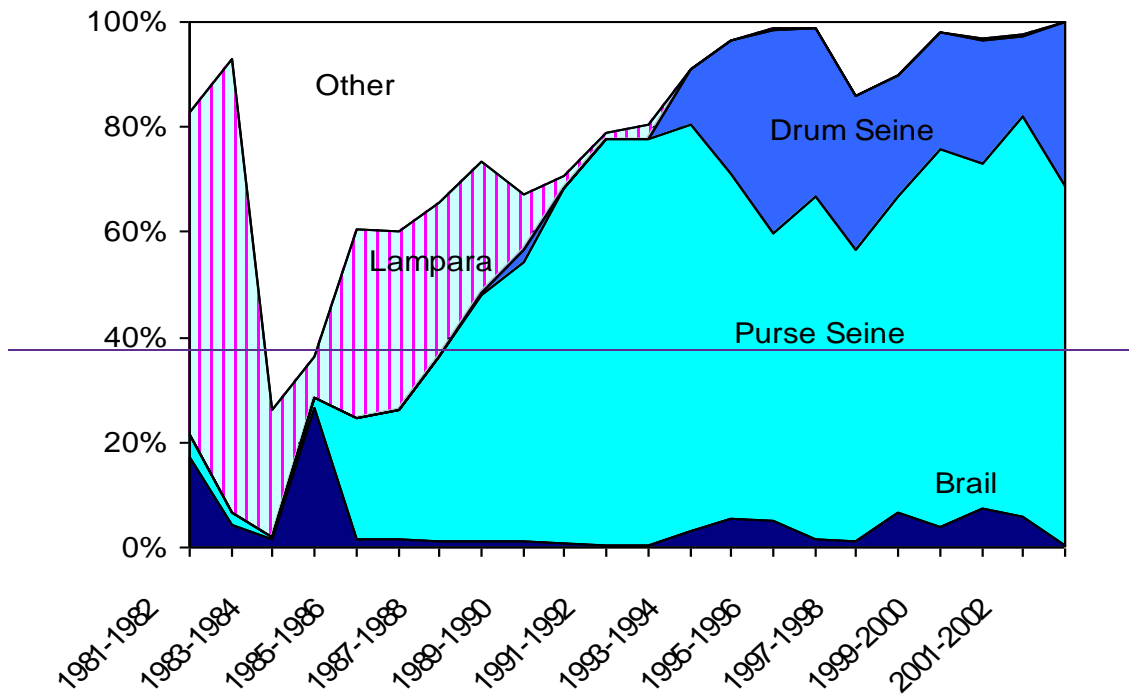


Figure 2-7. Percent of landings by season and gear type. (note: “Other” includes, but is not limited to jig, hook and line, trawl nets, and other roundhaul nets). Source: CDFG Landing Receipts.

Table 2-4. California landing receipt information for permitted and non-permitted vessels, 1980-1981 to 2002-2003 and 2020-2021 to 2023-2024. Vessels fishing for squid were not required to have a squid fishing permit until the 1998-1999 season; this table shows the activity by the vessels permitted through the 2023-2024 squid fishing season (MLDS).

Table 2-4. Historical California landing receipt information for permitted and non-permitted vessels, 1981-1982 to 2002-2003. Vessels fishing for squid were not required to have a squid fishing permit until the 1998-1999 season; this table shows the historical activity by the vessels currently permitted as of the 2002-2003 squid fishing season. Source: CDFG Landing Receipts.					
Season	Landings (tons)	Landings (tons) by current permittees	Percent landings made by permittees	Number of vessels	Number of currently permitted vessels
1980-1981	5,768	1,459	25.330%	55	10
1981-1982	25,851	11,349	43.900%	152	31

Table 2-4. Historical California landing receipt information for permitted and non-permitted vessels, 1981-1982 to 2002-2003. Vessels fishing for squid were not required to have a squid fishing permit until the 1998-1999 season; this table shows the historical activity by the vessels currently permitted as of the 2002-2003 squid fishing season. Source: CDFG Landing Receipts.

Season	Landings (tons)	Landings (tons) by current permittees	Percent landings made by permittees	Number of vessels	Number of currently permitted vessels
1982-1983	13,213	7,049	53.330%	125	28
1983-1984	1,087	740	68.110%	81	17
1984-1985	1,354	476	35.110%	95	21
1985-1986	14,376	8,833	61.440%	126	34
1986-1987	25,603	14,184	55.440%	122	34
1987-1988	25,214	15,547	61.770%	117	37
1988-1989	48,195	31,371	65.110%	119	43
1989-1990	33,051	22,705	68.770%	100	39
1990-1991	32,472	24,764	76.330%	102	41
1991-1992	38,666	30,503	78.990%	85	40
1992-1993	18,793	16,176	86.110%	82	40
1993-1994	54,452	44,335	81.440%	92	45
1994-1995	63,592	51,006	80.220%	110	54
1995-1996	93,833	72,749	77.550%	128	65
1996-1997	124,315	95,082	76.550%	143	77
1997-1998	10,898	9,917	91.000%	86	46
1998-1999	11,699	9,433	80.660%	117	67
1999-2000	127,248	107,934	84.880%	168	95
2000-2001	124,379	108,831	87.550%	152	85
2001-2002	102,667	96,757	94.220%	118	85
2002-2003	46,970	45,031	95.990%	105	78
<u>2020-2021</u>	<u>20,768</u>	<u>20,767</u>	<u>99.90%</u>	<u>80</u>	<u>66</u>
<u>2021-2022</u>	<u>62,854</u>	<u>62,853</u>	<u>99.90%</u>	<u>87</u>	<u>77</u>
<u>2022-2023</u>	<u>56,379</u>	<u>56,378</u>	<u>99.90%</u>	<u>89</u>	<u>78</u>
<u>2023-2024*</u>	<u>29,768</u>	<u>29,767</u>	<u>99.90%</u>	<u>82</u>	<u>72</u>

2.2.1.2 *Preliminary data.

The number of businesses purchasing squid has decreased since the early 1980s. Since the 2020-2021 season, the majority (90% or more) of the squid purchased was bought by 22 or fewer dealers. The other dealers purchase less than 100 tons per year.

2.8.1.2.2.11.1.2. Recreational Fishery

~~The other market squid user group is the recreational sector of the fishery.~~ Market squid are taken by individual recreational anglers to use for bait or personal consumption. The primary recreational use of market squid is through the live bait commercial market, when fishing for other species like rockfish, white seabass, and other key recreational target species. Market squid used as recreational bait are primarily caught by bait haulers using seine, lampara or brail nets. ~~This~~The relatively small volume of squid caught for recreational use is a high value fishery, ~~which~~and supplies bait to recreational fisheries along the California coast, primarily in southern California (CDFG ~~2001b~~). ~~2001~~). Recreational fishing effort for market squid is unable to be determined due to insufficient data. Live bait is sold from the catcher vessel at sea or from one of the many harbor-based bait dealerships. ~~Sport~~Recreational fishing vessels and privately owned skiffs catch their own squid bait by using attracting lights and brail nets and/or rod and reel. ~~Live and dead squid are ideal bait for a variety of California sport fisheries, especially rockfish and white seabass. Historically, commercial squid catch had been voluntarily reported on live bait logs. Beginning in 2019, live bait logs were discontinued, and all live bait has since been reported on Department fish tickets. Additionally, light boat operators record live squid bait catch in their market squid logbooks. As reported in the Department's Marine Landings Data System (MLDS), less than 7 tons of market squid were taken as live bait in the 2022-2023 season, about 0.01% of the total harvest.~~

2.8.2.2.11.2. **2.2.2 Fishing Effort**

2.8.2.1.2.11.2.1. ~~2.2.2.1~~ Commercial Fishing Effort

~~In the 1990s~~For decades, the market squid fishery has ranked as one of the highest in volume and value among the state's commercial fisheries: squid ranked number one in landings for ~~six~~the last 15 years and number one for dollars paid ex-vessel for ~~three~~9 of those 15 years (~~CDFG 2001c~~). CDFW 2024a). Although quite successful, the commercial squid fishery is unpredictable due to environmental (~~e.g., El Niño~~) and market conditions.

During an El Niño event (i.e., 1997-1998), squid availability declines along with fishing effort and catch. In years when squid are readily available, fishing effort appears to be determined by market conditions. Vessel participation is at its greatest during the late fall and early winter ~~for the~~in southern fisheryCalifornia and during the summer for ~~the~~northern fisheryCalifornia (Figure 2-8). ~~5~~. When squid processors have full freezers or the demand for California squid is low, vessels are generally put on market-imposed limits, and ex- vessel prices may be lowered. As squid availability declines as the

season progresses, many vessels leave for other fisheries. ~~If ex vessel prices drop too low, effort may also drop because of less economic incentive to fish.~~

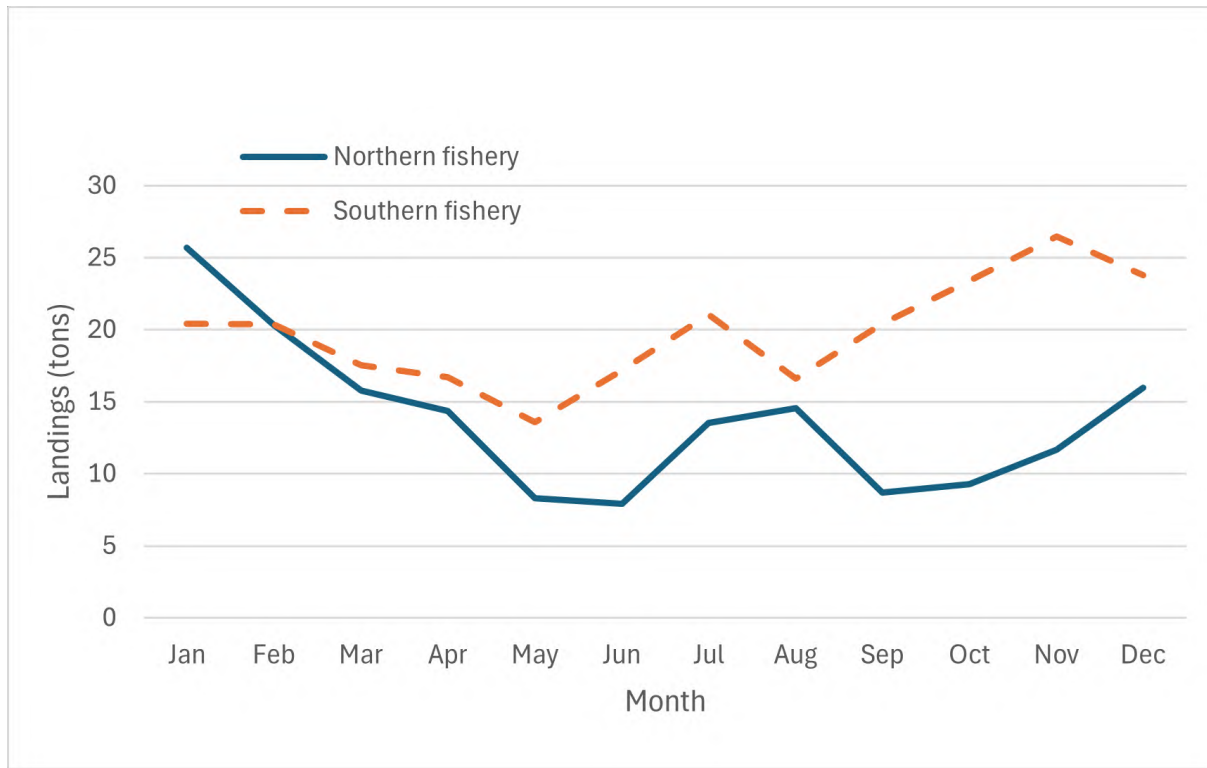


Figure 0-42-8. Average monthly landings in tons for the market squid fishery divided at Point Conception into northern (left axis) and southern (right axis) fisheries for the period of 1984 from 1969 through 2004. Source: CDFG Landing Receipts, 2024 (MLDS).

Although market squid may be available in commercial quantities from Baja California to Oregon, the fishery is centered in two areas of California: Monterey Bay and the Channel Islands off southern California. The earliest fishery, in Monterey Bay, caught less than 1,000 tons per year from 1916 (when the Department began keeping records) to 1923 (Dickerson and Leos 1992). From 1924 to 1932, landings averaged more than 2,000 tons per year. Most of ~~this~~ the catch from 1924 to 1932 was dried and exported to China; some was used domestically as canned or frozen product. The Asian market closed in 1933 due to financial conditions and the domestic market supported the Monterey fishery for many years. Landings in California were minimal until 1942 when demand from international aid programs triggered a rise in the need for squid the following year.

Landings peaked at close to 20,000 tons in the 1946-1947 season, then averaged 9,100 tons until the 1981-1982 season when greater than 25,000 tons were landed (Table 2- 2). Before the 1960s, the majority of squid landings

were in the Monterey Bay area. In 1961, the fishery in southern California experienced a dramatic increase in landings.

The southern fishery centers around the northern Channel Islands, Santa Catalina Island, and southern coastal nearshore areas (Hill and Yaremko 1997).

Since the early 1980s, landings in southern California have exceeded those of the northern fishery (Figure 2-96; also see Table 2-2). Fishery landings reached a peak of ~~126,772~~135,018 tons in the ~~1999-2000~~2011-2012 season. The rapid fishery expansion of the last ~~25~~40 years is a result of rising demand for squid in foreign markets, especially Europe and China.

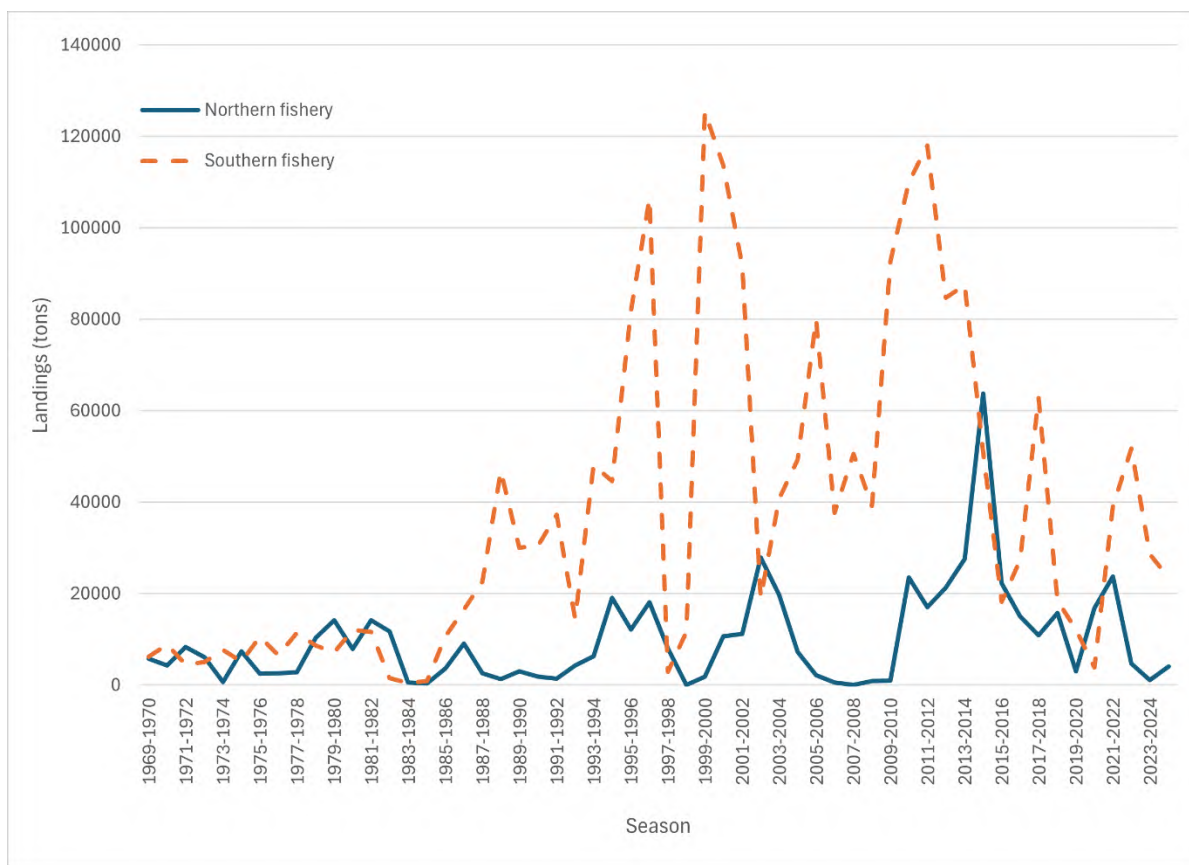


Figure 0-52-9. Market squid landings in tons from ~~1927-1928~~1969-1970 through ~~2002-2003 seasons~~ showing the increase in landings for the fishery south of Point Conception. Source: CDFG Landing Receipts. 2023-2024 seasons showing the increase in landings for the fishery south of Point Conception (MLDS).

Because the squid fishery was primarily an open-access fishery before 1998 and due to ~~recent~~ increases in statewide landings, legislation was enacted to ensure the sustainability of the squid resource and the marine life that depends on squid. ~~This~~The legislation required the purchase of an annual permit to land more than two tons or to attract squid by using light for

purposes of commercial squid harvest. Eligibility has been determined by the purchase of a permit in the initial 1998-1999 season and subsequently from the previous year (Table 2-5). ~~In the 2002-2003 season, there were 185 vessel permits and 40 light boat owner permits issued. Since 1998, the number of vessel and light boat owner permits has declined. Ninety-two Market Squid Vessel Permits (12 of which were non-transferable and 3 of which were experimental), 14 Market Squid Brail Permits, and 61 Market Squid Light Boat Permits were issued (CDFW 2024b) when the MSFMP was implemented in 2005. In the 2023-24 season, 68 Market Squid Vessel Permits and 28 Market Squid Light Boat Permits were issued. Since 2005, there have been 34 upgrades from light boat to brail permits. The influx of brail permits, particularly from 2010 to 2013, was the direct result of light boat permit upgrades (Figure 2-7).~~

Table 2-5. Vessel, brail, and light boat permit numbers, 2000 to 2024 (CDFW Automated License Data System).

Table 2-5. Vessel and light boat owner's permit issuances, 1998-99 to 2002-03 seasons. Source: CDFG Landing Receipts.				
Season Year	Number of Vessel Permits Issued	Vessel Attrition- (%) Number of Brail Permits	Number of Light Boat Ownerboat Permits Issued	
1998-1999	248	--	53	--
1999-2000	218 <u>200</u>	12.1 <u>--</u>	51 <u>--</u>	
2000-2001	195 <u>196</u>	9.6 <u>--</u>	50 <u>--</u>	
2001-2002	195 <u>184</u>	0.0 <u>--</u>	44 <u>--</u>	
2002-2003	185 <u>174</u>	5.1 <u>--</u>	40 <u>--</u>	
<u>2004</u>	<u>166</u>	<u>--</u>	<u>--</u>	
<u>2005</u>	<u>92</u>	<u>22</u>		<u>61</u>
<u>2006</u>	<u>89</u>	<u>19</u>		<u>59</u>
<u>2007</u>	<u>88</u>	<u>23</u>		<u>58</u>
<u>2008</u>	<u>88</u>	<u>23</u>		<u>57</u>
<u>2009</u>	<u>80</u>	<u>21</u>		<u>57</u>
<u>2010</u>	<u>81</u>	<u>25</u>		<u>53</u>
<u>2011</u>	<u>77</u>	<u>37</u>		<u>41</u>
<u>2012</u>	<u>77</u>	<u>42</u>		<u>36</u>
<u>2013</u>	<u>74</u>	<u>44</u>		<u>34</u>
<u>2014</u>	<u>75</u>	<u>44</u>		<u>34</u>
<u>2015</u>	<u>75</u>	<u>44</u>		<u>34</u>
<u>2016</u>	<u>74</u>	<u>45</u>		<u>33</u>
<u>2017</u>	<u>74</u>	<u>45</u>		<u>33</u>
<u>2018</u>	<u>73</u>	<u>45</u>		<u>33</u>
<u>2019</u>	<u>71</u>	<u>46</u>		<u>32</u>

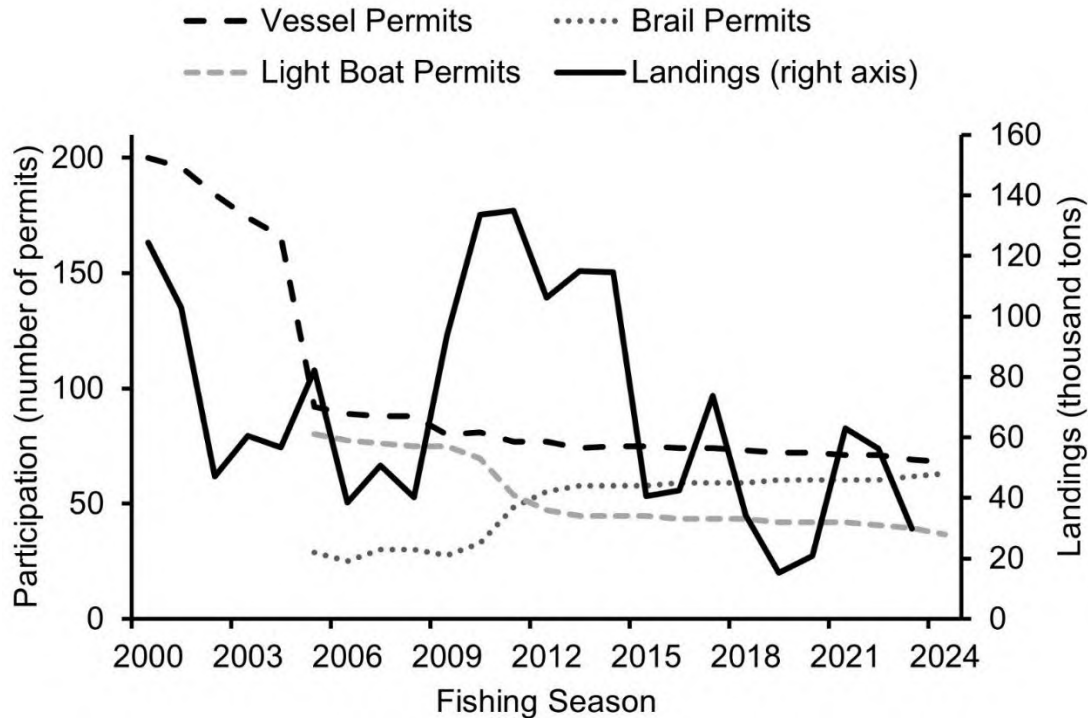
~~| | | | |
|------|----|----|----|
| 2020 | 72 | 46 | 32 |
| 2021 | 71 | 46 | 32 |
| 2022 | 71 | 46 | 31 |
| 2023 | 69 | 47 | 30 |
| 2024 | 68 | 48 | 28 |~~


Figure 0-6—

Not all. Market squid fishery participation (number of limited entry permits by type; left axis) and landings (thousand tons; right axis) from 2000 to 2024 fishing seasons (MLDS).

Of the 68 limited entry Market Squid Vessel Permits issued in 2024, 58 vessels reported market squid landings. As with many fisheries, a select number of vessels make the majority of the catch. Twenty-nine vessels made 80% of the landings (by weight) in 2023. Of the 48 brail permits issued in 2023, 14 brail-permitted vessels reported landing squid, suggesting that most brail-permitted vessels are solely acting as light boats with a portion catching squid for sale as live bait. Since 1998, the number of vessel and light boat owner permits has declined (Figure 2-8).

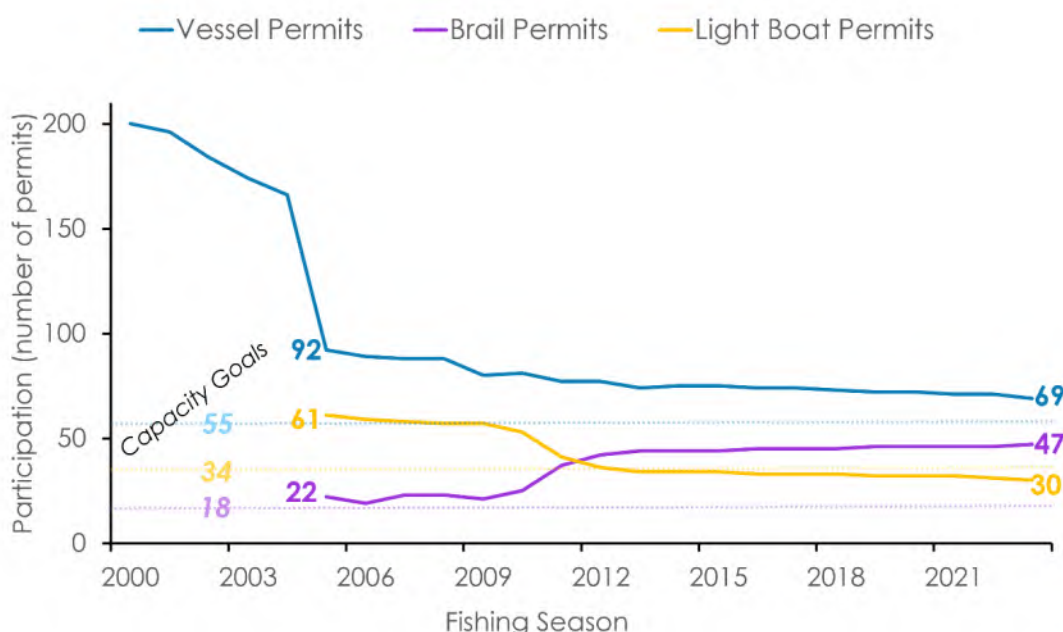


Figure 0-7 were active in the fishery during the moratorium period. Participation (number of permits) in the commercial market squid restricted access fishery from 2000 to 2023. Capacity goals are delineated as dotted lines.

Despite the large number of permits issued, the current squid fleet consists of approximately 6075 dedicated seiners-vessels. As with many fisheries, a select number of vessels made the majority of the catch. In the last four seasons, only 23, 30, 34, 2831, and 2129 permitted vessels, respectively, made 75% of the catch.

2.8.2.2.2.11.2.2. 2.2.2.2 Recreational Fishing Effort-

There are insufficientDue to limited data to describe, recreational fishing effort for market squid- is unable to be determined. Live bait logs used by commercial vessels that supply bait to the recreational fishery to voluntarily report catch (e.g., northern anchovy, Pacific sardine) dehad regularly reportreported squid taken. Additionally, some light boat operators record scooping live squid for bait in their logbooks. PreliminaryBeginning in 2019, live bait logs were discontinued, and all live bait has been reported on electronic landing receipts. This landings information, however, does not provide data on effort of individual anglers taking market squid for their own consumption or use as bait. As reported in the 2001-2002 season recorded 49Department's MLDS, less than 7 tons of market squid was taken as live bait, less than in the 2022-23 season, about 0.0501% of the total harvest. Again, these data are voluntary and should be considered as a minimum amount of squid harvested for bait.

2.9.2.12. 2.2.3 Fishery Impacts

The adverse effects from fishing activities may include physical, chemical and biological alterations of ~~the substrate habitat~~, loss of and or injury to benthic organisms, prey species and their habitat, and other components of the ecosystem. FMPs must include management measures that minimize adverse effects on marine ecosystems from fishing, to the extent practicable, and to identify conservation and enhancement measures. In addition, ~~they~~FMPs must contain an assessment of the potential adverse effects of all fishing activities and should consider the relative impacts of all fishing equipment used in varying habitats (~~Bargmann et. al. PPMC~~ 1998).

Fishing for market squid could have important trophic implications and other ecological impacts. ~~There is concern over~~For example, the use of chains as a seine weight in the commercial fishery. ~~Chains~~ have the potential of digging deeper into the ocean floor than the suggested alternatives, such as small diameter cables (Hastings and MacWilliams 1999). Net bottoms may also scrape the ocean floor and do harm to squid eggs. A suggestion ~~has been~~was previously made for a maximum depth and length of net to avoid disturbance to egg cases or to require that the net shall be no deeper than the depth fished. Further, ~~there is concern for~~ squid caught which have not yet spawned by targeting schools of squid using sonar which are in transit to spawning grounds. ~~could impact the sustainability of the fishery. This amended FMP now includes special provisions that will help reduce the potential ecological impacts described above. Chain purse lines will no longer be allowed, and nets will be required to be pursed using a rib line. The removal of chain purse lines and the use of a rib line minimize the amount of scraping and were selected as the most appropriate option rather than net depth or length restrictions. Additional weekend closures will allow for more uninterrupted spawning time.~~

Bycatch is minimal in the commercial market squid fishery, although ~~it cannot be~~is not avoided entirely. ~~Through~~While bycatch is known to occur in the fishery, certain species are required to be discarded by other statutes and regulations not encompassed by this FMP. Very few interactions have been observed between the California market squid fishery and threatened or endangered marine species of birds and mammals. The market squid fishery is classified as a Marine Mammal Protection Act Category III fishery in terms of impact on marine mammal stocks. A Category III fishery is defined by an annual mortality and serious injury of a stock is less than or equal to 1% of the Potential Biological Removal level (e.g., a remote likelihood of or no known incidental mortality and serious injury to marine mammals). According to the

NOAA List of Fisheries for 2023, documented interactions in the California squid purse seine fishery include California sea lion, long-beaked common dolphin Risso's dolphin, and short-beaked common dolphin (NOAA 2023).

From data gathered through the Department's portdockside sampling program, 8861,031 of 2,4021,521 samples (3768%) collected between October 1998January 2010 and October 2003December 2020 contained incidentally caught fish and/or invertebrates, excluding other CPS and squid egg cases (Table 2-6). Two or more species were observed as bycatch in 47% of landings with bycatch. Most of this bycatch was other coastal pelagic species, including Pacific sardine, Pacific mackerel, northern anchovy and jack mackerel. Approximately 3.225.8% of sampled landings from July 2010 to December 2020 contained squid egg cases. Previous drafts of this MSFMP reported that incidental catch of squid eggs was 2%. In addition, squid eggs occurred in 8.3% of the Monterey samples. This higher level of observed egg cases is most likely due to the shallower nature of the northern fishery and is a source of concern. Under the proposed management strategy, the fishery is monitored by evaluating escapement of squid eggs from the fishery. If the fishery damages squid spawning beds, and this damage is a significant source of egg mortality, the monitoring program will be biased unless this additional source of mortality is accounted for.

Currently, the type of net used to fish for squid is unregulated, although purse seines used for squid typically do not hang as deep as purse seines used for other species, so contact with the bottom is reduced. Incidental catches of squid eggsIncidental catches of squid egg cases and other species increase in the squid fishery when the nets are set in shallower water (less than 40.0 m), (131.2 ft)), where bottom contact may occur (Lutz and Pendleton 2001).– Damage to the substrate, and thus, mortality of squid eggs associated with purse seining for squid has not been quantified.–

A research study to measure the effect of purse seine fishing on squid spawning grounds has been undertaken by NOAA Fisheries and the Department. So far, preliminary results of this study are unavailable. The study will use three approaches to measure the effect of purse seines on squid beds: 1) Direct observation of egg capsule bycatch in the net from an observation boat; 2) ROV surveys of the squid egg capsule distributions in fished and unfished habitats, and 3) Determination of the natural mortality of squid eggs in heavily fished areas versus unfished areas. If current fishing practices are shown to affect squid egg survival, changes in gear or fishing practices can be proposed to the squid fishing industry to find the most efficient way to reduce the risk of egg loss due to fishery gear interaction. Potential future management options may include altering the mesh size or depth of the net, or closing some of the shallow water habitats to fishing.–

Less than 2 percent of the observed landings contained species that are prohibited

from being landed using seine gear (e.g., barracuda, yellowtail). In terms of species of concern, there have been seven observations of Chinook (King) salmon representing 1.6% of observed landings in Monterey as well as one observation of salmon (species unknown). In addition, bocaccio was observed in 1.2% of the Monterey landings.

The species with the highest average frequency of occurrence from 2019 to 2023 include Pacific sardine, unspecified kelp, Pacific mackerel, jack mackerel, and unspecified jellyfish respectively (Table 2-6). Less than 2% of the sampled landings contained species that are prohibited from being landed (e.g., barracuda, salmon, and white seabass). Most commercial fishing for CPS finfish and market squid takes place south of Pigeon Point. The potential for taking salmon exists in this area, but diminishes south of Monterey, California (37° N latitude) (PFMC 2010). As noted above, other fishery regulations may prohibit the catch of certain species encountered as bycatch in the market squid fishery. In those cases, if species are taken incidentally but prohibited for catch, they must be discarded.

Table 2-6. Percent frequency of occurrence of bycatch in observed loads of California market squid from 2019 to 2023. Table values represent the presence of a species in observed loads for that year. Any species with fewer than 1% occurrence during the entire timeframe is not listed. **Note** that presence of a species in dockside observations does not indicate the species is necessarily legal to possess or land in the market squid fishery.

Common Name	Scientific name	Monterey Moss Landing 2019	Santa Barbara Ventura 2020	San Pedro Terminal Is. 2021	2022	2023
PACIFIC SARDINE	Finfish	18.5	9.5	18.9	21.5	--
PACIFIC MACKEREL	Anchovy, northern	6.9	2.3	9.7	19.51	8.06
NORTHERN ANCHOVY	<i>Engraulis mordax</i>	5.0	3.9	4.0	6.2	
JACK MACKEREL		4.0	6.7	0.1	6.6	
MARKET SQUID						
EGGS						
Barracuda, Pacific	<i>Sphyrna argentea</i>	3.2	7.8	3.2	4.1	-
PACIFIC BUTTERFISH	Bass, kelp	2.0	4.1	1.8	0.7	1.0
Blacksmith	<i>Chromis punctipinnis</i>	=	=	0.7	2.4	3.2
BAT RAY	Bonito, Pacific	1.9	4.2	2.3	0.7	1.6
Butterfish (Pacific pompano)	<i>Peprilus simillimus</i>	16.6	16.8	13.5	17.0	3.2
JACKSMELT	Croaker, White (kingfish)	1.3	5.5	6	6.5	0.1
CALIFORNIA BARRACUDA	Fish, unspecified	0.9	=	1.0	1.6	1.6

Common Name	Scientific name	Monterey Moss Landing 2019	Santa Barbara Ventura 2020	San Pedro Termin al 2021	2022	2023
PACIFIC ELECTRIC RAY Flatfish, unspecified	0.9	4.917.59	14.5	13.6	8.1	4.8
PELAGIC RED CRAB Flying fish, California	<i>Cheilopogon pinnatibarbat</i> <i>californicus</i>	0.993	-	0.1.4	5.7	3.2
DUNGENESS CRAB	0.7 3.9 -	-	-	-	-	-
SAND DAB Halfmoon	0.6 <i>Medialuna californiensis</i>	2.1	02.4	0.27	-	6.5
SEA STAR Halibut, California	0.6 <i>Paralichthys californicus</i>	0.97.41	4.8	02.1	0.910.6	1.6
SCULPIN Herring, Pacific	0.6 <i>Clupea pallasii</i>	1.85	-	2.1	1.46	-
HORN SHARK	0.4 - -	-	0.9	-	-	-
TURBOT Herring, red-eye round	0.4 <i>Etrumeus teres</i>	11.11	1.92	2.9	4.1	4.8
SOLE Jacksmelt	<i>Atherinopsis californiensis</i>	18.52	037.4	30	0.624.4	0.316
Mackerel, jack	<i>Trachurus symmetricus</i>	47.22	33.7	27.9	49.6	37.1
Mackerel, Pacific (chub)	<i>Scomber japonicus</i>	52.78	48.2	21.4	53.7	58.1
CABEZON Midshipman, unspecified	0.3 <i>Porichthys spp.</i>	0.2.78	0.1	0	01.6	1.6
ROCK CRAB Midshipman, plainfin	<i>Porichthys notatus</i>	0.3.7	14.5	11.4	06.5	0.3
CHINOOK (KING) SALMON Midshipman, specklefin	0.3 <i>Porichthys myriaster</i>	0	0	2.1	1.6	1.6
Pacific sardine	<i>Sardinops sagax</i>	74.07	71.1	58.6	67.5	54.8
MEXICAN POMPANO Rockfish, unspecified	<i>Sebastes spp.</i>	2.78	1.2	3.6	03.3	01.6
CALIFORNIA HALIBUT	0.3 0.5 0.1 0.4	-	-	-	-	-
RAY Rockfish, bocaccio	<i>Sebastes paucispinis</i>	0.93	0.3.6	0.2.1	01.6	0
MIDSHIPMAN Sablefish	0.2 <i>Anoplopoma fimbria</i>	0	01.2	0.7	0.54.9	0
PACIFIC SAND DAB Salmon, Chinook	0.2 <i>Oncorhynchus tshawytscha</i>	1.85	6	0.7	0	0.3
BOCACCIO Sanddab, unspecified	0.2 <i>Citharichthys spp.</i>	6.48	1.2	3.6	3.3	0
QUEENFISH Sanddab, longfin	0.2 <i>Citharichthys xanthostigma</i>	0.93	01.2	0.2	0	1.6
SMELT Sanddab, Pacific	0.2 <i>Citharichthys sordidus</i>	11.11	27.7	0.427.1	21.1	1.6

Common Name <u>name</u>	Total <u>All</u> Ports <u>Scientific name</u>	<u>Monterey</u> <u>Moss</u> <u>Landing</u> <u>20</u> <u>19</u>	<u>Santa</u> <u>Barbara</u> <u>Ventura</u> <u>20</u> <u>20</u>	<u>San</u> <u>Pedro</u> <u>Termin</u> <u>al</u> <u>Is.</u> <u>2021</u>	<u>2022</u>	<u>2023</u>
WHITE-CROAKER <u>Sanddab,</u> <u>speckled</u>	0.2 <u>Citharichthys</u> <u>stigmaeus</u>	<u>4.63</u>	<u>3.6</u>	0.4 <u>3</u>	<u>4.9</u>	<u>1.6</u>
PACIFIC-SAURY <u>Scorpionfish,</u> <u>California</u>	0.2 <u>Scorpaena guttata</u>	<u>9.26</u>	<u>9.6</u>	0.2 <u>9</u>	<u>16.3</u>	<u>17.7</u>
FLYINGFISH <u>Sculpin,</u> <u>staghorn</u>	0.2 <u>Leptocottus armatus</u>	<u>0</u>	0.1 <u>2</u>	<u>1.4</u>	0.3 <u>3</u>	<u>0</u>
<u>Smelt, night</u>	<u>Spirinchus starksi</u>	<u>0</u>	<u>3.6</u>	<u>2.1</u>	<u>0</u>	<u>0</u>
<u>Sole, English</u>	<u>Pleuronectes vetulus</u>	<u>4.63</u>	<u>6</u>	<u>7.9</u>	<u>8.9</u>	<u>0</u>
ROCKFISH <u>Sole, sand</u>	0.2 <u>Psettichthys</u> <u>melanostictus</u>	<u>1.85</u>	<u>1.2</u>	<u>2.1</u>	0.6 <u>5</u>	0.1
<u>Sunfish, ocean</u>	<u>Mola mola</u>	<u>0</u>	<u>3.6</u>	<u>0.7</u>	<u>4.9</u>	<u>0</u>
<u>Topsmelt</u>	<u>Atherinops affinis</u>	<u>1.85</u>	<u>4.8</u>	<u>0.7</u>	<u>0.8</u>	<u>0</u>
<u>Turbot, unspecified</u>	<u>Pleuronectidae</u>	<u>1.85</u>	<u>0</u>	<u>2.1</u>	<u>1.6</u>	<u>0</u>
PACIFIC HERRING <u>Turbot,</u> <u>hornyhead</u>	0.2 <u>Pleuronichthys verticalis</u>	<u>3.7</u>	0.9 <u>6</u>	<u>8.6</u>	<u>8.9</u>	<u>1.6</u>
<u>Wrasse, rock</u>	<u>Halichoeres semicinctus</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0.8</u>	<u>1.6</u>
<u>Elasmobranchs</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
ENGLISH SOLE <u>Ray, bat</u>	0.2 <u>Myliobatis californica</u>	0.3 <u>7</u>	<u>0</u>	0.1 <u>2.9</u>	<u>10.6</u>	<u>9.7</u>
<u>Ray, Pacific electric</u>	<u>Torpedo californica</u>	<u>8.33</u>	<u>13.3</u>	<u>9.3</u>	<u>8.9</u>	<u>0</u>
MISCELLANEOUS-FISH <u>Shark, horn</u>	0.2 <u>Heterodontus francisci</u>	<u>6.48</u>	<u>0</u>	<u>2.1</u>	0.2 <u>4</u>	<u>0</u>
CURLFIN TURBOT <u>Skate,</u> <u>big</u>	0.1 <u>Raja binoculara</u>	0.5 <u>2.78</u>	<u>6</u>	0.1	<u>3.3</u>	<u>0</u>
MACKEREL-UNCLASSIFIED <u>Skate,</u> <u>California</u>	0.1 <u>Raja inornata</u>	0.5 <u>2.78</u>	0.1 <u>2</u>	<u>1.4</u>	<u>0.8</u>	<u>0</u>
OCTOPUS <u>Skate,</u> <u>unspecified</u>	0.1 <u>Rajidae</u>	<u>0</u>	0.1 <u>2</u>	0.2 <u>1</u>	<u>0.8</u>	<u>1.6</u>
<u>Stingray</u>	<u>Dasyatidae</u>	<u>0.93</u>	<u>1.2</u>	<u>2.1</u>	<u>0</u>	<u>0</u>
<u>Invertebrates</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
SALEMA <u>Anemones,</u> <u>unspecified</u>	0.1 <u>Anthozoa</u>	<u>0</u>	<u>3.6</u>	<u>0.7</u>	<u>0.8</u>	<u>0</u>
BLUE SHARK <u>Crab,</u> <u>unspecified</u>	0.1 <u>Cancer spp.</u>	<u>6.48</u>	0.2 <u>12.1</u>	<u>7.9</u>	<u>7.3</u>	<u>3.2</u>
HORNYHEAD-TURBOT <u>Crab, claws</u>	0.1 <u>Cancer spp.</u>	<u>2.78</u>	<u>2.4</u>	0.2 <u>5</u>	<u>2.4</u>	<u>0</u>
SPECKLED-SANDDAB <u>Crab,</u> <u>decorator</u>	0.1 <u>Bivalvia</u>	0.2 <u>93</u>	<u>2.4</u>	0.1	<u>0.8</u>	<u>0</u>
<u>Crab, Dungeness</u>	<u>Metacarcinus magister</u>	<u>5.56</u>	<u>9.6</u>	<u>17.1</u>	<u>7.3</u>	<u>0</u>
SURFPERCH <u>Crab, red</u> <u>rock</u>	0.1 <u>Cancer productus</u>	0.5 <u>56</u>	<u>3.6</u>	<u>5.7</u>	<u>4.1</u>	<u>0</u>

Common Name name	Total All Ports Scientific name	Monterey Moss Landing 20 19	Santa Barbara Ventura 20 20	San Pedro Termin al Is. 2021	2022	2023
SEA URCHIN Crab, rock unspecified	0.1 Cancer spp.	0.93	0.2 4	1.4	2.4	0
CALIFORNIA- LIZARD FISHCrab, shells	0.1 --	8.33	15.7	0.2 12. 1	8.9	0
Crab, swimming unspecified	--	12.04	7.2	2.1	0.8	0
Jellyfish, unspecified	Hydrozoa	35.19	49.4	37.9	26.8	9.7
Lobster, California spiny	Panulirus interruptus	1.85	6	0.7	1.6	1.6
SAND SOLE Mussel, unspecified	0.1 Mytilus spp.	0.56 48	1.2	2.1	0.8	6.5
DIAMOND- TURBOT Octopus, unspecified	0.1 Octopus spp.	2.78	2.4	0.2 1.4	0.8	0
BARRED SAND- BASS Prawn, spot	0.1 Pandalus platyceros	0.93	1.2	0.2 4.3	1.6	0
BIGMOUTH- SOLE Pyrosoma	0.1 Pyrosoma atlanticum	27.78	31.3	0.2 16. 4	28.5	24.2
CALIFORNIA SPINY- LOBSTER Salps	0.0 --	6.48	0.1 3.6	4.3	4.9	8.1
BLACKSMITH Sand dollar	0.0 Dendraster excentricus	0.93	1.2	0.1 4	0	0
GREENSPOTTED- ROCKFISH Sea cucumber, unspecified	0.0 Holothuroidea	1.85	0.1 3.6	2.9	3.3	1.6
BIG SKATE Shrimp, target	0.0 Sicyonia penicillata	0.2 3.7	7.2	2.1	4.1	6.5
WAHOO Squid egg cases	0.0 --	31.48	45.8	0.1 30	35	1.61
BLUE ROCKFISH Marine Plants and Algae	0.0 --	0.2 --	--	--	--	--
YELLOWTAIL Algae, marine	0.0 Phycophyta	21.3	13.3	0.1 20	9.8	9.7
SKATE Elgrass	0.0 Zostera spp.	3.7	0.1 2.4	2.9	5.7	1.6
SHRIMP- UNCLASSIFIED Kelp, unspecified	0.0 Laminariales	60.19	73.5	0.1 35. 7	62.6	56.5
SHOVELNOSE- GUITARFISH Kelp, feather boa	0.0 Egregia menziesii	7.41	6	0.1 6.4	7.3	1.6
SALMON Kelp, giant	0.0 Macrocystis pyrifera	0.2 11.11	4.8	22.9	4.1	6.5
Total Port Samples- Taken Surfgrass	2,402 Phyllospadix spp.	415 35.19	988 57.8	999 34. 3	22	4.8

2.13. ~~2.3~~ Social and Economic Characteristics of the Market Squid Fishery

Squid fishing supplements the income of many seine vessels that also participate in fisheries such as salmon, tuna, herring, and other CPS throughout California, Oregon, Washington, and Alaska. A substantial number of market squid vessels have home ports outside California, likely due to declines in other fisheries. Some light boats also participate in other fisheries that do not use attracting lights.

The number of businesses purchasing squid had remained constant since the early 1980s; however, since the 1994-1995 season, the majority (80% or more) of the squid purchased was bought by nine or fewer dealers. In 2023, at least 80% of the catch was purchased by six dealers. Currently, the California squid industry is centered on global markets that have placed an increased demand upon California market squid. Vessels targeting squid usually have a relationship with one market from which they receive orders for specific amounts of squid.

When demand or storage space is limited, fishing is limited regardless of squid availability (Pomeroy and FitzSimmons 2001). The price paid to vessels depends on the market demand and the availability of the resource. Historically, when volume was low, the price paid per ton was high, and the price is driven down when volume is high. Since 2000 the median ex-vessel price of market squid increased from \$0.10 to \$0.50 per pound and remained at \$0.50 per pound from 2016 to 2019. In 2020, the median ex-vessel price increased to \$0.60 per pound with an average price of \$1,160.00 per ton and remained at a median price of \$0.60 per pound through the 2023-2024 fishing season (Figure 2-9).

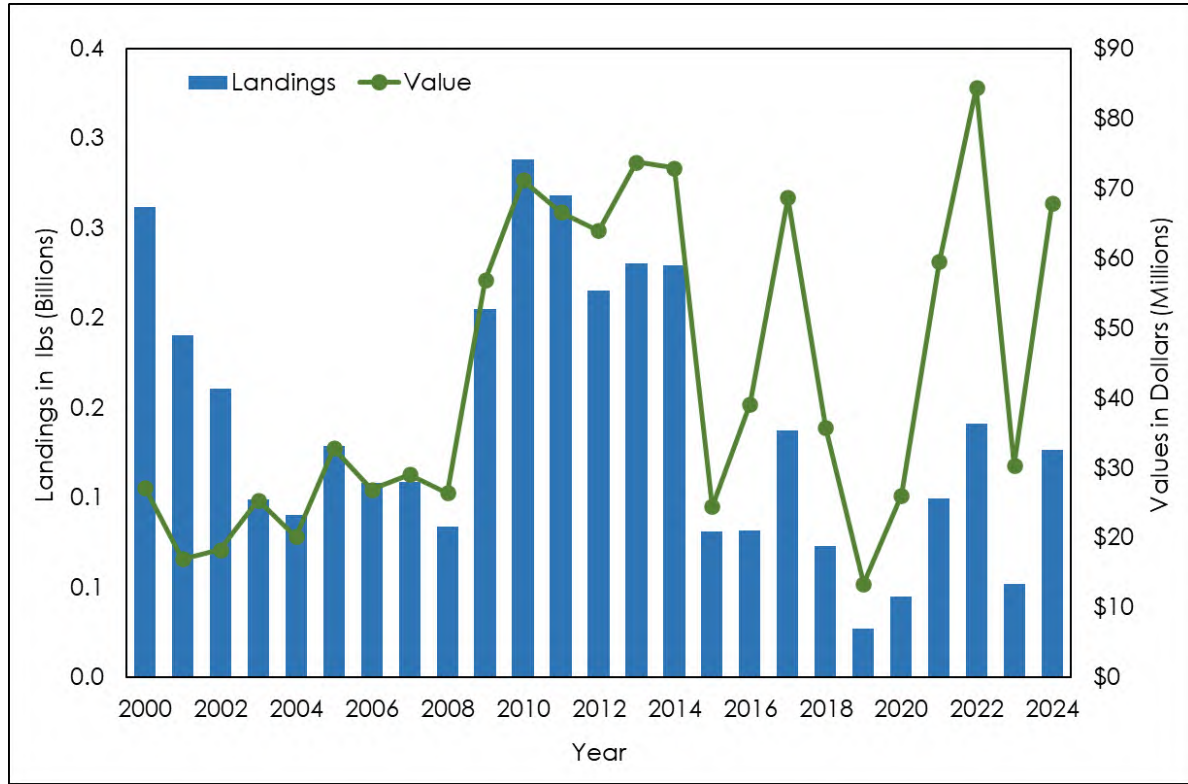


Figure 0-8. Dollars paid ex-vessel and landings in tons 2000 through 2024 (MLDS).

Although the volume of squid produced by the state's fleet is primarily dependent on the international market, the price paid for landings has influenced fishing effort, volume of squid caught, and size of squid caught. If squid processors reach capacity or supply exceeds demand, effort may decline due to lower economic incentive to fish. In recent years, international demand for market squid has remained constant with occasional size-based limits (Diane Pleschner-Steele, pers. comm.). Crew wages are typically 50% of ex-vessel revenue after operating costs. California's fishing industry ranks among the top five seafood producing states in the nation (CSC 1997), and growth or decline in commercial fishing, including the market squid industry, affects production, trade and employment throughout the California economy. California market squid is the most valuable commercial fishery product to the state in terms of volume and revenue, generating more than \$35 million ex-vessel revenue in recent years. Among California fishery exports, market squid ranked first by volume and value; further, market squid has ranked first in both volume and revenue several times during the 1990s (Table 2-7). The vast majority of squid is frozen for export to China, Japan and Europe where it is used mainly for human consumption. Minor amounts are sold fresh or canned.

Table 2-7. Market squid volume and value exported and respective rankings of California fishery exports from 1990 through 2000 (last year data available Source: NOAA Fisheries.

Year	Squid exported (tons)	Export value*	Rank by volume	Rank by value	Percent catch exported
1989	5,267	\$5,667,283	1	7	11.7
1990	4,571	\$4,110,021	2	10	14.6
1991	2,619	\$2,637,344	12	20	6.4
1992	4,187	\$3,938,031	2	8	29.0
1993	4,569	\$5,448,155	1	6	9.7
1994	15,801	\$15,817,174	1	3	25.8
1995	24,107	\$21,196,325	1	1	30.2
1996	36,377	\$32,802,620	1	2	41.1
1997	49,745	\$45,989,317	1	1	64.2
1998	1,554	\$2,109,087	8	20	48.7
1999	37,411	\$36,355,586	1	1	29.8
2000	92,701	\$71,637,625	1	1	75.2

*Note: export value not adjusted for inflation. _____

The role of international buyers in the success of the California market squid fishery is substantial. After decades of generally low catches, volume increased during the 1990s because of new markets and higher prices. Landings and ex-vessel revenue declined during the 1997-1998 El Niño when squid became harder to catch. In 1999, overseas markets collapsed due to poor economic conditions in Asia. Since then, there has been some recovery of the Asian market, although demand is affected greatly by performance of other worldwide fisheries, particularly the Falkland Islands-*Loligo gahi* fishery.

There are three major port areas associated with California's commercial market squid fishing industry (Table 2-8): Northern California (Monterey County); Santa Barbara port area (Ventura and Santa Barbara Counties); and Los Angeles port area (Los Angeles and Orange Counties).

Table 2-8. Market squid landings (in tons) by port area (N-SFO = counties north of San Francisco; SFO = San Francisco County, M/SC = Monterey and Santa Cruz Counties; SLO = San Luis Obispo County; SB/VE = Santa Barbara and Ventura Counties; LA/OC = Los Angeles and Orange Counties; SD = San Diego County). Source: CDFG Landing Receipts.								
Season	N-SFO	SFO	M/SC	SLO	SB/VE	LA/OC	SD	Total
1990-1991	1	142	8,728	<1	13,201	10,400	<1	32,472
1991-1992	2	1,622	7,389	<1	18,098	11,554	0	38,666
1992-1993	<1	2,698	6,751	1	7,297	2,028	18	18,793
1993-1994	<1	1,122	6,643	2,247	25,571	18,869	<1	54,452
1994-1995	77	2,464	15,021	1,540	32,685	11,802	2	63,592
1995-1996	2	823	2,700	151	67,824	22,331	2	93,833
1996-1997	0	367	5,235	226	90,039	28,441	1	124,309
1997-1998	4	226	9,045	<1	1,593	28	2	10,898
1998-1999	-	-	-	10	6,948	1,584	-	8,543
1999-2000	0	6	332	8	85,134	41,758	10	127,248
2000-2001	1	0	7,854	19	67,542	48,917	45	124,378
2001-2002	0	309	8,539	68	27,583	33,363	-	69,862
2002-2003	4	953	26,478	393	15,121	4,066	-	47,016

Since the 1993-1994 fishing season, the Santa Barbara and Los Angeles port areas have received the bulk of market squid revenues, with the highest revenues coming into the ports of San Pedro, Port Hueneme and Ventura (Table 2-9). Since the 1981-1982 season, these three areas account for an average of 98% of all squid landings except during El Niño periods (1982-1983—53% and 1992-1993—86%) when squid landings were minimal. Based on landings, other ports where squid are landed landing are of minor economic importance.

Table 2-9. Dollars paid ex-vessel for market squid by port area (N-SFO = counties north of San Francisco; SFO = San Francisco County, M/SC = Monterey and Santa Cruz Counties; SLO = San Luis Obispo County; SB/VE = Santa Barbara and Ventura Counties; LA/OC = Los Angeles and Orange Counties; SD = San Diego County). *Note: Dollars not adjusted for inflation. Source: CDFG Landing Receipts.

Season	N-SFO	SFO	M/SC	SLO	SB/VE	LA/OC	SD	Total
90-91	\$144	\$30,691	\$1,299,765	\$59	\$1,223,192	\$1,343,869	\$643	\$3,898,362
91-92	\$1,452	\$344,122	\$873,987	\$51	\$830,200	\$1,137,595	\$0	\$3,187,407
92-93	\$40	\$452,087	\$652,164	\$163	\$764,033	\$444,441	\$3,612	\$2,316,541
93-94	\$6	\$320,948	\$1,012,803	\$505,792	\$2,612,486	\$2,923,770	\$0	\$7,375,804
94-95	\$17,477	\$633,318	\$2,807,522	\$453,583	\$8,149,029	\$2,607,151	\$306	\$14,668,386
95-96	\$463	\$214,959	\$432,174	\$21,301	\$13,432,243	\$5,544,538	\$50	\$19,645,729
96-97	\$0	\$12,160	\$521,737	\$58,681	\$14,810,588	\$8,354,422	\$262	\$23,757,850
97-98	\$2,180	\$60,241	\$2,136,685	\$10	\$429,861	\$19,499	\$525	\$2,649,001
98-99	-	-	-	\$621	\$2,969,874	\$749,300	-	\$3,719,794
99-00	\$6	\$1,774	\$79,518	\$4,024	\$24,883,285	\$11,120,763	\$7,000	\$36,096,369
00-01	\$16	\$0	\$1,881,726	\$1,912	\$11,609,928	\$10,652,521	\$12,683	\$24,158,785
01-02	\$0	\$74,049	\$1,773,494	\$13,688	\$4,774,247	\$6,813,077		\$13,448,556
02-03	\$1,262	\$214,582	\$6,525,785	\$76,546	\$4,068,682	\$1,171,035		\$12,057,892

Generally, ex-vessel revenues have closely paralleled landings until the 2000-2001 season when dollars paid ex-vessel clearly dropped (Figure 2-10). Although the volume of squid produced by California markets is dependent on the international market, the price paid to fishermen can influence both effort and overall volume of catch. Additionally, price paid to fishermen depends on market demand as well as the availability of the resource. When volume of catch is low, the price paid per ton exceeds \$500 per ton during the 1997-1998 and 2002-2003 El Niño events. When volume is high, the price may be as low as \$100 per ton. Squid taken by brail and in small volumes tends to receive a better price. Often, the price of squid will start high at the beginning of the southern California fishery, and decline as the frozen product begins to accumulate in cold storage facilities. This may result in a reduced incentive for fishermen to fish later in the season. Therefore, declines in landings for springtime

months may reflect a reduction in the availability of squid as well as reduced effort. Additionally, many vessels participating in other fisheries (e.g. salmon, CPS finfish) will return to other ports during spring months. California markets (processors) play a role in determining the composition of the squid fleet. Although there are many California vessels that have historically participated in the fishery that are still active, there is an increasing proportion of fishery participants from Alaska, Washington and Oregon, reflecting a willingness of the processors to employ these vessels.

Figure 2-10. Dollars paid ex-vessel and landings in tons for the 1981-1982 through 2001-2002 seasons. Source: CDFG Landing Receipts.

Light boats are typically paid 20% of the catch value after costs (Lutz and Pendleton 2000).

Most of the revenue in the squid fishery is generated by purse and drum seine fishermen (Table 2-10). Drum seine vessels have been increasing their revenues steadily since the 1994-1995 season (excluding El Niño periods)-7). Revenue from squid fishing using lampara nets has declined 99% from 2.7 million dollars in 1981-1982 to very low valueszero dollars in recent years.

Table 2-7. Dollars paid ex-vessel by gear type for market squid fishery from 1981-1982 to 2023-2024 seasons. Note: dollars are not adjusted for inflation (MLDS).

Season	Brail	Purse seine	Drum seine	Lampara	Other	Total Value
1981-82	\$784,085	\$485,689	-	\$2,736,398	\$544,990	\$4,551,162
1982-83	\$220,933	\$232,256	-	\$2,256,622	\$17,260	\$2,727,070
1983-84	\$9,884	\$1,973	-	\$88,548	\$168,499	\$268,905
1984-85	\$313,559	\$26,941	-	\$37,497	\$192,358	\$570,355
1985-86	\$22,772	\$1,836,397	-	\$755,088	\$1,059,659	\$3,673,915
1986-87	\$46,771	\$2,208,225	-	\$819,332	\$1,109,205	\$4,183,532
1987-88	\$30,728	\$1,831,687	-	\$473,646	\$867,786	\$3,203,847
1988-89	\$25,106	\$2,621,290	\$10,924	\$956,279	\$1,262,613	\$4,876,212
1989-90	\$16,809	\$1,792,182	\$23,630	\$168,002	\$953,209	\$2,953,832
1990-91	\$12,810	\$2,576,712	-	\$109,038	\$1,199,802	\$3,898,362
1991-92	\$5,218	\$2,243,108	\$2,118	\$12,063	\$924,899	\$3,187,407
1992-93	\$5,808	\$2,080,155	-	\$22,029	\$208,549	\$2,316,541
1993-94	\$68,758	\$6,611,752	\$441,568	\$1,811	\$251,916	\$7,375,804

FINAL MARKET SQUID FISHERY MANAGEMENT PLAN
DATED: 01 April 2005– Amendment 1: XXXX, 2025

1994-95	\$280,832	\$8,181,704	\$5,857,551	\$9,658	\$338,642	\$14,668,386
1995-96	\$213,986	\$12,327,482	\$6,912,266	\$45,053	\$146,942	\$19,645,729
1996-97	\$109,399	\$16,506,397	\$6,901,917	\$28,358	\$211,777	\$23,757,850
1997-98	\$17,566	\$1,752,117	\$870,181	-	\$9,137	\$2,649,001
1998-99	\$97,272	\$2,483,404	\$1,138,391	-	\$725	\$3,719,794
1981-82	\$784,085	\$485,689	--	\$2,736,398	\$544,990	\$4,551,162
1982-83	\$220,933	\$232,256	--	\$2,256,622	\$17,260	\$2,727,070
1983-84	\$9,884	\$1,973	--	\$88,548	\$168,499	\$268,905
1984-85	\$313,559	\$26,941	--	\$37,497	\$192,358	\$570,355
1985-86	\$22,772	\$1,836,397	--	\$755,088	\$1,059,659	\$3,673,915
1986-87	\$46,771	\$2,208,225	--	\$819,332	\$1,109,205	\$4,183,532
1987-88	\$30,728	\$1,831,687	--	\$473,646	\$867,786	\$3,203,847
1988-89	\$25,106	\$2,621,290	\$10,924	\$956,279	\$1,262,613	\$4,876,212
1989-90	\$16,809	\$1,792,182	\$23,630	\$168,002	\$953,209	\$2,953,832
1990-91	\$12,810	\$2,576,712	--	\$109,038	\$1,199,802	\$3,898,362
1991-92	\$5,218	\$2,243,108	\$2,118	\$12,063	\$924,899	\$3,187,407
1992-93	\$5,808	\$2,080,155	--	\$22,029	\$208,549	\$2,316,541
1993-94	\$68,758	\$6,611,752	\$441,568	\$1,811	\$251,916	\$7,375,804
1994-95	\$280,832	\$8,181,704	\$5,857,551	\$9,658	\$338,642	\$14,668,386
1995-96	\$213,986	\$12,327,482	\$6,912,266	\$45,053	\$146,942	\$19,645,729
1996-97	\$109,399	\$16,506,397	\$6,901,917	\$28,358	\$211,777	\$23,757,850
1997-98	\$17,566	\$1,752,117	\$870,181	--	\$9,137	\$2,649,001
1998-99	\$97,272	\$2,483,404	\$1,138,391	--	\$725	\$3,719,794
1999-00	\$260,915	\$27,750,936	\$8,009,106	\$37,693	\$26,235	\$36,084,885
2000-01	\$437,870	\$18,146,102	\$5,502,793	\$17,042	\$54,960	\$24,158,768
2001-02	\$146,345	\$11,601,275	\$1,691,986	\$2,894	\$6,040	\$13,448,542
2002-03	\$33,392.00	\$8,369,379	\$3,651,143	\$119	\$3,233	\$12,057,268
2004-05	\$255,622	\$19,888,469	\$6,600,510	\$96,483	\$214,001	\$27,055,085
2005-06	\$0	\$28,783,257	\$11,310,135	\$25,178	\$29,120	\$42,335,964
2006-07	\$203,937	\$13,868,319	\$4,626,069	\$2,784	\$40,426	\$18,741,533
2007-08	\$529,044	\$21,708,163	\$7,180,469	\$15,047	\$226	\$29,432,950
2008-09	\$145,636	\$20,103,331	\$7,160,752	\$26	\$523	\$27,410,268
2009-10	\$1,509,856	\$34,752,417	\$11,896,157	\$0	\$19,905	\$48,178,334
2010-11	\$1,653,189	\$42,556,518	\$22,005,745	\$1,980	\$18,874	\$66,236,306
2011-12	\$3,307,709	\$44,777,948	\$19,210,014	\$19,066	\$2,918	\$67,317,655
2012-13	\$2,400,491	\$45,133,287	\$15,193,840	\$6,137	\$48,617	\$62,782,371
2013-14	\$2,282,399	\$50,960,802	\$20,478,753	\$0	\$15,351	\$73,737,304
2014-15	\$26,795	\$51,368,803	\$21,298,309	\$6,748	\$92,059	\$72,792,713
2015-16	\$8,332	\$15,224,186	\$9,252,200	\$0	\$1,646	\$24,486,365
2016-17	\$759,874	\$28,501,457	\$11,358,631	\$9,055	\$4,970	\$40,633,988
2017-18	\$994,642	\$52,797,856	\$19,559,007	\$348	\$102,915	\$73,454,767
2018-19	\$762,875	\$24,841,341	\$7,852,440	\$20,093	\$41,012	\$33,517,762
2019-20	\$80,863	\$11,902,036	\$3,206,836	\$0	\$12,821	\$15,202,556
2020-21	\$88,068	\$17,573,544	\$7,464,312	\$0	\$892	\$25,126,815
2021-22	\$1,340,376	\$52,913,859	\$20,855,574	\$0	\$8,189	\$75,177,998

2022-23	\$792,706	\$50,145,172	\$16,436,809	\$0	\$6,262	\$67,380,949
2023-24*	\$1,302,598	\$45,147,953	\$15,907,465	\$0	\$27,688	\$62,385,703

*Preliminary data.

2.14. Location of the Fishery

The market squid fishery is centered in the nearshore waters off California, though market squid may be available in commercial quantities from British Columbia to Baja, California. Market squid harvest is allowed statewide in all areas defined as ocean water in CCR Title 14 §27.00, except where prohibited or restricted, as specified, in state MPAs and round haul gear closure areas (FGC §8750-8757). California squid landings have occurred at various times from as far south as San Diego and as far north as Eureka, spanning the entire state (Figure 2-10).

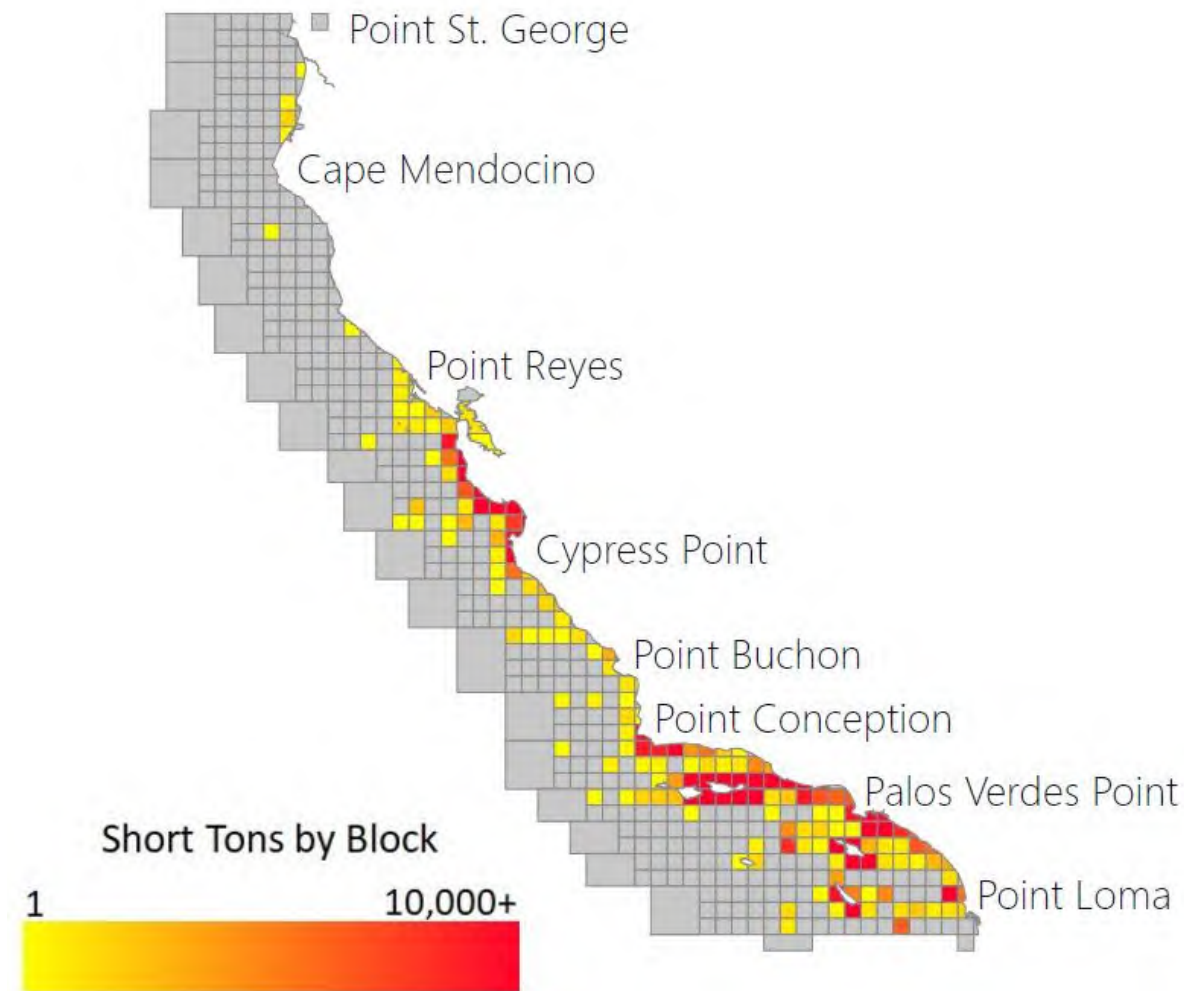


Figure 0-9

An average of 114 fishing vessels participate seasonally in the market squid fishery. For the entire squid fishery, the average crew size is 4.5 people (range 3-8, n = 33, Pomeroy et al.).

2002). The average purse seine vessel in San Pedro has a crew size of 7.2 (range 4–10).
Geographic location of major fishing areas in California by CDFW blocks (10' x 10') from 1999 through 2023 (MLDS).

Seasonal shifts in resource availability and timing of peak spawning have produced two distinct fishing areas. Vessel participation is greatest during the late fall and early winter for southern California and during the summer for central California. Summertime fishing effort in central California is focused around Monterey Bay and tends to occur between April and September, coinciding with the upwelling season (Zeidberg et al. 2006). The southern portion of the fishery encompasses most of the SCB including the northern and southern Channel Islands southward along the coast to La Jolla and is most active from October to February. During this time there is less stratification of the water column and more mixing due to winter storms and colder air temperatures (Zeidberg et al. 2006).

Prior to the 1980s the majority of market squid landings were primarily from Monterey Bay; however, since the 1985–1986 season, the majority of the catch has come from the SCB. Landings spiked dramatically in Monterey Bay area in 2010 and continued through 2014 (Figure 2-6, Table 2-8). Monterey, Ventura, and Los Angeles Counties are the principal counties where squid is offloaded and distributed (Figure 2-11). While some vessels fish near home ports year-round, in general, the fleets' mobility continues to grow. Vessels based out of Monterey will travel south and vessels from Ventura or Los Angeles will also travel north to fish.

Table 2-8. Percent of revenue received by port area complex from 1981–1982 through 2023– 2024 fishing seasons. Note: dollars were not adjusted for inflation (MLDS).

~~Crew wages are typically 50% of ex vessel revenue after operating costs. Light boats are paid 20% of the catch value after costs (Lutz and Pendleton 2001). Usually, there is a 1:1 ratio of light boats to seiners on the fishing grounds (A. Henry, pers. obs., O. Amoroso, pers. comm.).~~

Table 2-11. Percent of revenue received by port area complex from 1981–1982 through 2001–2002 fishing seasons. Note: dollars were not adjusted for inflation. Source: CDFG–Landing Receipts.

Season	Monterey Area	Santa Barbara/Ventura	Los Angeles	Other Areas
1981–1982	71.8	4.5	23.7	0.0
1982–1983	84.1	0.1	15.8	0.0
1983–1984	62.7	3.2	3.3	30.8
1984–1985	32.1	21.5	43.9	2.6
1985–1986	42.9	22.3	34.8	0.0

Table 2-11. Percent of revenue received by port area complex from 1981-1982 through 2001-2002 fishing seasons Note: dollars were not adjusted for inflation. Source: CDFG-Landing Receipts.

Season	Monterey Area	Santa Barbara/Ventura	Los Angeles	Other Areas
1986-1987	30.5	21.2	46.0	2.2
1987-1988	31.1	34.2	34.2	0.4
1988-1989	23.5	7.3	67.6	1.6
1989-1990	38.9	6.4	54.6	0.1
1990-1991	33.3	31.4	34.5	0.8
1991-1992	27.4	26.0	35.7	10.8
1992-1993	28.2	33.0	19.2	19.7
1993-1994	13.7	35.4	39.6	11.2
1994-1995	19.1	55.6	17.8	7.5
1995-1996	2.2	68.4	28.2	1.2
1996-1997	2.2	62.3	35.2	0.3
1997-1998	80.7	16.2	0.7	2.4
1998-1999	0.0	83.1	16.6	0.3
1999-2000	0.2	68.9	30.8	0.0
2000-2001	7.7	48.1	44.1	0.1
2001-2002	13.2	35.5	50.7	0.7
2002-2003	54.1	33.7	9.7	2.4
2003-2004	27.3	40.6	25.5	6.6
2004-2005	10.5	74.9	12.5	2.1
2005-2006	2.3	16.3	81.4	0
2006-2007	1.4	65.8	32.8	0.1
2007-2008	0	53.9	46	0.1
2008-2009	1.8	67.7	30.3	0.2
2009-2010	0.7	62	36.9	0.4
2010-2011	16.1	42.6	40.7	0.6
2011-2012	11.3	44.9	43.2	0.6
2012-2013	9.3	29.5	51.7	9.5
2013-2014	13.3	43	34.8	8.9
2014-2015	40.9	30	14.7	14.4
2015-2016	37.2	41.5	2.6	18.7
2016-2017	17.6	42.6	25.3	14.5
2017-2018	10	61.8	23.8	4.4
2018-2019	40.1	37	18.1	4.8
2019-2020	16.1	38.6	40.6	4.7
2020-2021	66.6	6.7	12.3	14.4
2021-2022	31.8	46	17.1	5
2022-2023	5.5	68.6	25.8	0.1
2023-2024*	1.3	44.3	53.2	1.2

From 1981–1982 through 2000–2001, an average of 54 dealers received market squid from fishing vessels each season. In the early 1980s, dealers in the Monterey port area received the majority of the squid business (Table 2–11). This trend has shifted south to the Santa Barbara/Ventura port area complex that has received, on average, 55% of market squid business in the last five years.

2.9.1.2.14.1. 2.3.1 Demographic and Social Communities Associated with the Market Squid Fishery

The market squid fishery consists of two major geographical regions: the northern and southern fisheries (Figure 2–11). The northern fishery occurs along the central coast of California centered on Monterey Bay; the southern fishery extends from the Channel Islands southward along the coast to La Jolla. Monterey, Santa Barbara, Ventura and Los Angeles Counties are the principle counties where squid is offloaded. Three primary squid fleets are recognized as distinct groups operating out of these areas: 1) Monterey and Moss Landing (northern fishery); 2) Ventura and Port Hueneme (Ventura and Santa Barbara Counties); and 3) San Pedro and Terminal Island [Los Angeles County, (Pomeroy and FitzSimmons 2001)].

2.3.1.1 Northern Fishery

2.3.1.1.1 Monterey County

In 1997, the Monterey County population was approximately 365,000 with 33,000 people in the city. The city encompasses 8.62 square miles. Monterey County has three main economic focuses: agriculture, tourism, and the military. Agriculture takes place mainly in the Salinas Valley, the stronghold of the Monterey County economy. In 1995, 30% of the county's labor and proprietor income was from agriculture. Tourism activity is concentrated primarily along the coastal areas. The military has the Naval Postgraduate School and the Defense Language Institute, which are located in the city of Monterey. In 1993, military downsizing began with the relocation of 13,000 soldiers and their families from Fort Ord in Monterey County. Currently, the community is working to replace the military industrial sector with an education sector (PFMC 2002). Another valuable economic component of Monterey County began in 1930 with the onset of a thriving fishing industry at Cannery Row. Today, all that remains of this industry is a small commercial fleet and a few fish businesses that operate out of Monterey Bay marinas.

Figure 2–11. Geographic location of major fishing areas in California by CDFG blocks (10' x 10') from 1991 through 2000 based on Department landing receipts

2.3.1.1.2 Monterey Area Squid Fishery

Monterey Harbor and Moss Landing are the two ports in Monterey Bay that receive

market squid. Monterey Harbor has been involved in the squid industry since the late 1800s. Today, space for fish packing and storage facilities at this harbor are limited, so the commercial wharf is used primarily for offloading purposes and squid are transported to processing facilities outside the city. Moss Landing Harbor did not become an active offloading site until 1947. Since then, it has been the site of squid and CPS finfish offloading operations, marine research, recreational fishing and tourism. These industries must share harbor space and sometimes tension exists between the groups (Pomeroy et al. 2002).

Currently, four major processors operate in Monterey Bay and each has historical family links to fishing in the region (Pomeroy et al. 2002). In addition, many current fishermen are descendants of Italian fishermen who settled here long ago and initiated early fishing efforts (Pomeroy and FitzSimmons 2001). Over time, many different vessels have landed squid in Monterey Bay; but the majority of landings are made by a small group of local fishermen collectively known as the Monterey Bay wetfish fleet (wetfish: sardine, anchovy, mackerel, squid and bonito). This subgroup of skippers has extensive social and cultural ties to the wetfish industry and the local community. Historically, the Monterey fleet has fished for a combination of CPS finfish and squid. Many have shifted to other fisheries such as San Francisco Bay herring or Alaska salmon to supplement their income, especially when wetfish catches are low (Pomeroy et al. 2002).

Today, the Monterey Bay fleet consists mostly of modern vessels and drum seines that tend to be larger with steel hulls and often two holds (Lutz and Pendleton 2000). Market squid is one of the primary targets of the Monterey Bay wetfish industry. However, following the El Niño in late 1997, squid landings were slow to recover in this region (Pomeroy et al. 2002) until February 2002.

2.3.1.2 Southern Fishery—Ventura and Port Hueneme

2.9.2.2.14.2. 2.3.1.2.1 Santa Barbara County

The population of Santa Barbara County increased from 369,608 in 1990 to 399,347 in 2000 (CTTCA 2000). Agriculture accounted for 11% of Santa Barbara's total income in 1997. In 1999, manufacturing overtook agriculture as the most important contributor to the economy of Santa Barbara County. Non-agricultural income from health care and social assistance, retail trade, professional, scientific and technical services, and construction followed manufacturing in terms of importance (PFMC 2002).

2.3.1.2.2 Ventura County

Similar to Santa Barbara, agriculture accounted for 9% of the county's labor and proprietor income, but was overtaken by manufacturing in 1999. Again, manufacturing was followed by other sources of non-agricultural income: retail trade, wholesale trade, health care and social assistance, and finance and insurance sectors

~~(PFMC 2002).~~

~~2.3.1.2.3 Ventura/ Port Hueneme Fishery~~

~~Four harbors play a role in the CPS industry: Santa Barbara, the Channel Islands Harbor, Ventura, and Port Hueneme. Santa Barbara's port is primarily geared towards coastal tourism and only minimal quantities of squid are landed here annually. Similarly, the Channel Islands Harbor is designed mainly to support recreation and does not support commercial fisheries. However, there are holding facilities containing live squid, anchovy, and sardine to provide bait for recreational and commercial fishermen in the area.~~

~~Ventura Harbor is of crucial importance for offloading squid. The harbor is used primarily for commercial fishing operations, although port space is shared with sport fishing and tourist operations. Ventura's commercial fishermen are largely composed of descendants of Slavic fishermen who arrived in the area long ago. The Ventura fleet targets squid as well as Alaska salmon and San Francisco herring, but CPS species are not often targeted (Pomeroy and FitzSimmons 2001). Concerns are now being raised about the future economic sustainability of the fishery since several areas of squid fishing at the Channel Islands have been designated as state marine reserves (Pomeroy et al. 2002).~~

~~Port Hueneme is located in Ventura County and was created to provide an ocean link from the California central coast agricultural community to global markets (PFMC 2002). Port Hueneme is the U.S. port of entry for the central coast area of California and the only deep water harbor between Los Angeles and San Francisco harbors. It ranks among the top seaports in California for general cargo. Port Hueneme specializes in the import and export of automobiles, heavy agricultural equipment, industrial vehicles, fresh fruit and produce, forest products, and other cargo. Port Hueneme ranks as the top seaport in the United States for citrus export and it ranks among the top ten seaports for automobile and banana imports. Over \$4 billion in cargo value moves through Port Hueneme annually. The port provides space for local sport and commercial fishing industries and related activities generate over \$388 million for the local economy each year; 3,500 jobs in Ventura County are related to operations at Port Hueneme (PFMC 2002).~~

~~Since 1985, Port Hueneme has been the top squid receiving port in the state. The primary function of this deepwater port is cargo transportation. As a result, space allotted for commercial fishing operations is often cramped and crowded (Pomeroy et al. 2002). Historically, Port Hueneme has been an important receiving station for the wetfish industry. The number of processors fluctuates from year to year depending on the market; but, on average, there are eight processors working the region at a given time. In addition, the timing of the squid season complements the community's agricultural off-season providing ample labor, cold storage and transportation~~

resources. There are two distinct groups of fishermen in this fleet. The first group is composed of local in-state fishermen who primarily target CPS finfish, squid, and occasionally tuna and bonito. Many fishermen in this group are from Monterey and San Pedro/ Terminal Island areas and are drawn to the area in the winter for the squid fishery since revenues are declining in the Alaska salmon fishery and boats are being excluded from the San Francisco Bay herring fishery. The second group, over half of the fleet, are out of state fishermen attracted to the southern California market squid fishery after encountering problems in other fisheries (e.g., salmon, herring). The Ventura ports are utilized by many fishermen working the Channel Islands since they are closer and more convenient than Monterey or San Pedro ports (Pomeroy et al. 2002).

2.3.1.3 Southern Fishery – San Pedro/ Terminal Island

2.3.1.3.1 Los Angeles County

The ports of San Pedro and Terminal Island are located in the county of Los Angeles. The population of Los Angeles County increased from 8,863,000 to 9,519,000 between 1990 and 2000.

2.3.1.3.2 San Pedro

The population in San Pedro decreased from 85,987 in 1990 to 84,697 in 2001. In 1996, 51.6% of the community was Caucasian, 33.8% was Hispanic, 6.2% was African-American, and 7.6% was Asian. The average per capita income in 1996 was \$19,413 (Claritas 1996).

San Pedro is located in southwest Los Angeles on the southeastern slope of the Palos Verdes Peninsula. The community's roots developed over a century of participation in fishing and related industries and are described in the San Pedro Community Environmental Perspectives (1989). The community is relatively small with a hometown feeling and is enhanced by the fact that many residents are locally employed.

During the 1980s, the commercial fishing industry in Los Angeles declined, directly affecting the local economies of San Pedro and Wilmington. One reason for the decline was competition from foreign fisheries, which operated with lower labor costs and government subsidies. State and local taxes and high insurance costs were blamed as additional burdens on the struggling industry. By 1986, only one fish-packing plant remained of the 14 that operated in 1960 (PFMC 1998). This plant has since closed.

2.3.1.3.3 San Pedro/Terminal Island Fishery

The San Pedro/Terminal Island fishery industry is not the primary focus of the ports in this region. The main priority at these ports is tourism and transportation of cargo, oil and

gas. However, San Pedro has long been recognized as a major center for the California CPS industry's purse seine fleet. Much of the revenue generated by the fleet remains in the community through slip fees, boat maintenance, fuel purchases, live-bait sales, and by supplying squid for processing (Lutz and Pendleton 2001). Many fishery participants have ancestors from Italy and the country formerly known as Yugoslavia that participated in the fishery generations past. Most of the San Pedro fleet relies solely on market squid, coastal pelagic species (CPS) and coastal tuna for their income. As a result, the variability and uncertainty in the market affect fishermen, processors and receivers. Historically, participants in this fishery have survived by shifting their efforts between species (Pomeroy et al. 2002).

A survey of the San Pedro fleet initiated in 2000 revealed that most of the vessels were old with wooden hulls (Lutz and Pendleton 2000). The average age of the vessels in this fleet is 47 years and, thus, cost effective insurance is not available to over 1/3 of the fleet. Another problem is non-uniform fishing effort within the fleet. In 1999, four vessels landed 45.6% of the total fleet revenue because they were able to operate at higher production levels and thereby dominate the fleet (Lutz and Pendleton 2001). In the mid 1990s, San Pedro ports experienced an incursion of out of state vessels to participate in the market squid fishery. This resulted in a flooded market and caused squid prices to fall (Lutz and Pendleton 2001).

2.3.1.4 Summary of the Three Squid Fishery Areas

In all three regions, most skippers view commercial fishing as a family tradition. In fact, most have other family members involved in fishing, processing, or market activities.

The relationship between fishermen and the markets plays a vital role in the survival and sustainability of a fishery. The California market squid fishery began as a small industry that supplied squid to local markets. In recent years, the fishery has shifted away from local markets. Currently, the California squid industry is now centered on global markets that have placed an increased demand upon California market squid. Additionally, squid fishing is driven by market orders. ~~Vessels targeting squid usually have a relationship with one market from which they receive orders for specific amounts of squid.~~ *Preliminary data.

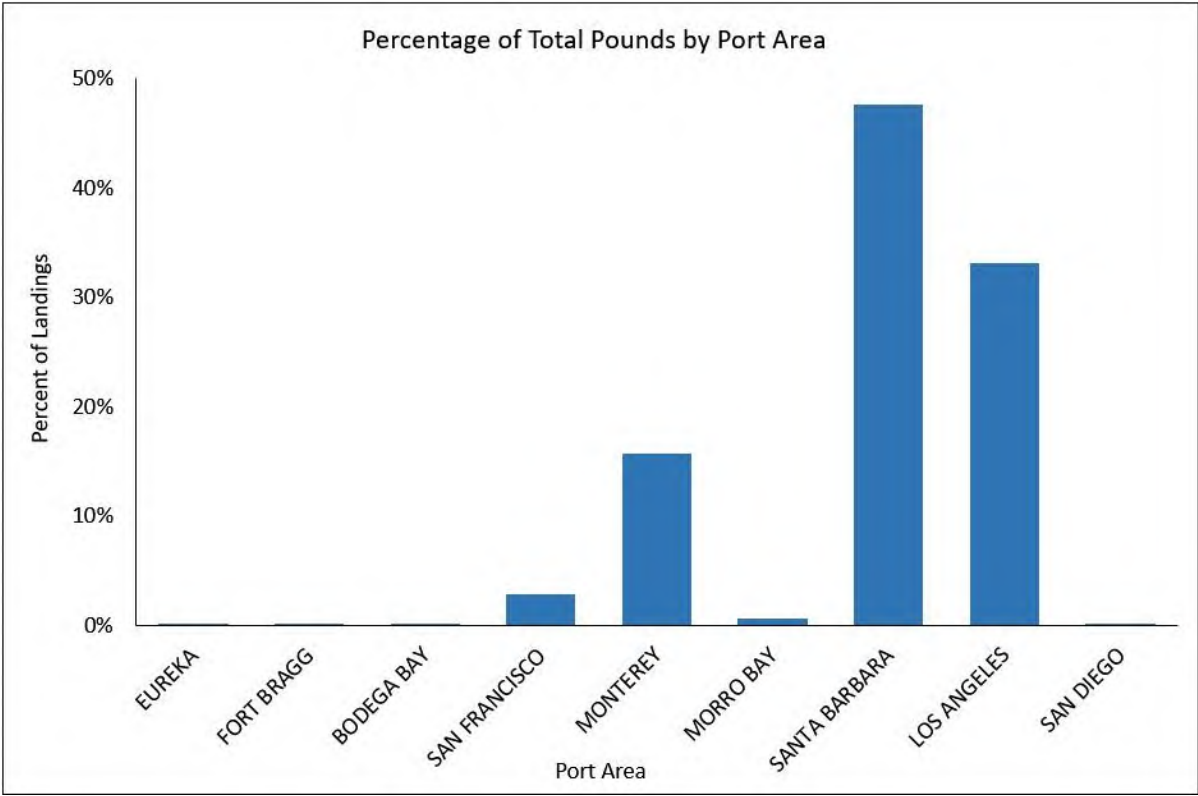


Figure 0-10-When demand or storage space is limited, boats are placed on limits regardless of squid availability (Pomeroy and FitzSimmons 2001).

2.4. Percentage of market squid total landings (by weight) by port complex from 1980 to 2024 (MLDS).

2.15. History of Conservation and Management Measures

2.9.3.2.15.1. State Management

The regulatory history of the commercial market squid fishery by the State of California began with a ban on squid attracting lights in 1959 (Table 2-13). 9). The addition of former FGC §8397 in 1957 prohibited the use of thesesquid attracting lights in the Monterey Bay fishery.

Table 2-9 Summary of market squid regulations from 1959 to the present.

Date	Bill # (Author) / Regulatory Section	Management Action
1959	§8397	It is unlawful to use any artificial light to lure or attract squid in Districts 16 and 17. This section applies to all artificial lights except those lights necessary for the usual operation of a vessel not used to lure or attract, or intended to lure or attract, squid.

<u>Date</u>	<u>Bill # (Author) / Regulatory Section</u>	<u>Management Action</u>
<u>1983</u>	<u>AB 513 (Farr)</u>	<u>Authorizes the Commission to adopt regulations specifying the days of the week and times of the day when squid may be taken north of Point Conception.</u>
<u>1984</u>	<u>CCR Title 14 §149</u>	<u>The Commission adds CCR Title 14 §149, to prohibit any vessel, using or possessing a roundhaul net in Districts 16 and any Monday through Thursday.17, from taking market squid between noon Friday and midnight Sunday and between noon and midnight on</u>
<u>1987</u>	<u>AB 123 (Farr)</u>	<u>Allows the use of lights to attract squid in District 17.</u>
<u>1988</u>	<u>AB 4055 (Farr)</u>	<u>Allows the use of lights to attract squid in District 16.</u>
<u>1989</u>	<u>SB 1080 (Mello)</u>	<u>Allows the use of all roundhaul nets, including purse seine and half-purse seine nets, to take squid in all portions (including the southernmost portion) of 16, subject to the same area and season restrictions previously in effect for lampara nets.</u>
<u>1993</u>	<u>AB 14 (Hauser)</u>	<u>Restricts the use of attracting lights in District 10.</u>
<u>1993</u>	<u>SB 1030 (Thompson)</u>	<u>A landing fee of \$0.0019/lb. is imposed.</u>
<u>1997</u>	<u>SB 364 (Sher)</u>	<u>Authorizes the take of market squid north of Pt. Conception between noon on Sunday and noon on Friday. Requires a permit for the take of squid with a dip, purse seine, or lampara net for commercial purposes. Requires a permit to attract squid by light from a vessel. Establishes a fee for a commercial squid Market Squid Light Boat Permit. Allows for transfer of vessel or light boat permits under certain conditions. A three-year moratorium on commercial squid vessel permits is established; the possession of a permit from the previous year is required in order to renew.</u>
<u>1998</u>	<u>AB 1928 (Morrow)</u>	<u>No permit is necessary, nor is a landing fee imposed, for the take of live bait. Drum seines and other roundhaul nets excepted from prohibition of rings along lead line and pursing of net bottoms.</u>
<u>1998</u>	<u>AB 1241 (Keeley)</u>	<u>Marine Life Management Act passes.</u>
<u>2000</u>	<u>CCR Title 14 §149</u>	<u>Amendment – Prohibits commercial take of market squid between noon on Friday and noon on Sunday from Pt. Conception south to the U.S.-Mexico border. Requires commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities.</u>
<u>2000</u>	<u>CCR Title 14 §149</u>	<u>Amendment – Vessels fishing or lighting for squid are restricted to using no more than 30,000 watts of light. Each vessel fishing or lighting for squid must shield the entire filament of each light, directing the light downward, or the vessel must keep the illumination completely submerged underwater.</u>
<u>2000</u>	<u>SB 1544 (Sher)</u>	<u>Establishes a \$400 fee for a commercial Market Squid Vessel Permit. Extends the sunset date for SB364 to 1 January 2004. Extends existing duties imposed on the Department and the Commission and makes an appropriation.</u>

<u>Date</u>	<u>Bill # (Author) / Regulatory Section</u>	<u>Management Action</u>
<u>2001</u>	<u>SB 209 (Sher)</u>	<u>Requires the Commission to adopt the MSFMP by 31 Dec 2002, after consideration and public hearings. Requires the Commission to establish fees for commercial Market Squid Vessel Permits and commercial Market Squid Light Boat Permits annually commencing April 1, 2003. Prohibits each person who is issued a commercial Market Squid Light Boat Permit from selling, trading or transferring the permit to another person. Provides that specified provisions will become inoperative upon the adoption by the Commission of a MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.</u>
<u>2001</u>	<u>CCR Title 14 §149</u>	<u>Proposed regulatory changes establish catch limits in order to protect the squid resource and manage the fishery sustainably; a harvest guideline of 125,000 tons was selected.</u>
<u>2001</u>	<u>Title 14, CCR §159</u>	<u>Market Squid is included under Commercial Fishing for CPS.</u>
<u>2003</u>	<u>Title 14, CCR §1.39</u>	<u>Market Squid is included in CPS under General Provisions and Definitions.</u>
<u>2004</u>	<u>Title 14, CCR §149</u>	<u>Establishes a seasonal (April 1 to March 31 of the following year) catch limit of 118,000 tons (107,047 mt) for commercial catch of Market Squid. Continues closures between 1200 hours (noon) on Friday and 1200 hours (noon) on Sunday of each week from the U.S.-Mexico border to the California-Oregon border. When the commercial fishery is closed, squid may be taken for commercial purposes only incidentally to the take of other target species or for live bait. Prohibits take of Market Squid for commercial purposes using attracting lights in all waters of the Greater Farallones National Marine Sanctuary. This regulation also applies to vessels pursuing squid for live bait purposes. Requires any operator of a commercial market squid vessel or permit holder of any commercial market squid permit to submit an accurate record of his/her squid fishing, lighting, or brailing activities on market squid logbooks provided by the Department, as appropriate to the type of fishing activity. Prohibits attracting squid by light except as authorized by restricted access market squid fishery permits. This regulation does not apply to seine skiffs of a permitted vessel or to vessels pursuing squid for live bait purposes only. Allows incidental take of market squid when fishing for other target species. This volume shall not exceed 2 tons per trip. Prohibits the take of live bait for purposes other than use as live bait or sale as live bait.</u>
<u>2005</u>	<u>Title 14, CCR §149.1</u>	<u>Establishes a market squid fishery RA program.</u>
<u>2005</u>	<u>§149.3, Title 14, CCR</u>	<u>Allows the commission to issue three-Non-Transferable Market Squid Vessel Permits for purposes of developing a squid fishery in areas previously not utilized for squid production.</u>

<u>Date</u>	<u>Bill # (Author) / Regulatory Section</u>	<u>Management Action</u>
<u>2014</u>	<u>§149, Title 14, CCR</u>	<u>Allows incidental take of market squid when fishing for other target species. This volume shall not exceed 2 tons per trip or 10% of the total volume by weight of all fish landed of possessed.</u>
<u>2022</u>	<u>§149.3, Title 14, CCR</u>	<u>Repealed.</u>
<u>2025</u>	<u>Title 14, CCR §149</u>	<u>Amended the MSFMP to include language requiring a rib line, rope purse line, and extending the weekend closure. Amended market squid regulation to change closure notification from U.S. Coast Guard Channel 16 to wildlife.ca.gov/marine. Reiterated the regulation that weekend closures include any type of lighting for squid.</u>

Processors believed that squid caught with the aid of attracting lights were of poorer quality and smaller in size than those caught without lights. The fishermen also felt that the lights disrupted ~~the~~ spawning. Further, banning attracting lights would prevent canneries from harvesting squid directly from their docks. ~~This~~The prohibition on attracting lights was lifted in 1987 for most of Monterey Bay (District 17); in 1988, attracting lights were once again allowed in the Pacific Grove area in Monterey Bay (District 16).

In 1983, the Commission adopted regulations that limited the days of the week and times of day that fishermen could engage in the take of market squid. CCR Title 14, §149 prohibited any vessel, using or possessing a roundhaul net in Monterey, from taking market squid between noon on Friday and midnight on Sunday, and between noon and midnight on any day Monday through Thursday. In 1989, Senate Bill (SB) 1080 (Mello) allowed fishermen to utilize all types of roundhaul nets, including purse and half-purse seine nets, in the take of market squid in the Pacific Grove area (District 16). In 1990, the Commission amended its regulations (CCR Title 14 §149) to allow for the take of squid by roundhaul gear before midnight Monday through Thursday north of a line running 252° magnetic from the Moss Landing Harbor entrance.

In 1993, the market squid landing ~~tax~~fee was increased to \$0.0019 per pound (SB 1030, Thompson). The same year, Assembly Bill (AB) 14 (Hauser) restricted vessels from the use of squid attracting lights in District 10 (ocean waters of San Mateo, San Francisco, Marin and Sonoma Counties).

Before April 1998, the market squid fishery was largely an unregulated, open access fishery. Because of increasing market interest and rising squid landings, SB 364 (Sher), was passed in 1997. This legislation established a \$2,500 permit for market squid vessels and light boats and a three-~~year~~

moratorium on entry into the fishery; called for a three-year study of the fishery; and provided for the creation of ~~a Squid Fishery Advisory Committee (an SFAC)~~ and ~~a Squid Research Scientific Committee (an SRSC)~~ to advise the Department on research and interim measures. Senate Bill 364 also required that the Department present a report on the fishery to the Legislature, with recommendations for a conservation and management plan by April 2001.

In 1998, the MLMA was enacted. In 1999, the Legislature appropriated \$5.2 million to implement ~~this legislation, the MLMA~~. The MLMA removed from the Legislature the burden of micro-managing fisheries by transferring that oversight role to the Commission and directing several actions, including ~~the~~:

- development of a master plan for implementing the MLMA;
- development of management plans for California state fisheries; and
- development of a plan for dealing with emerging fisheries as they become operational in California.

In 2000, SB 1544 (Sher) was enacted, reducing the market squid permit fee to \$400 from \$2,500 until April 2003 and extending the sunset date for FGC Article 9.7 to 1 January 2004. When Governor Davis signed ~~this legislation~~SB 1544, he did so to ensure uninterrupted protection and regulations for the squid fishery, but requested that the Legislature, squid fishermen and their representatives as well as other stakeholders “review the appropriateness of the squid permit fee.”

In 2000, the Commission adopted interim measures for the market squid fishery under CCR Title 14 §149. The regulations prohibited the commercial take of market squid between noon on Friday and noon on Sunday from Pt. Conception south to the ~~US-U.S.-~~ Mexico border and required commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities. In response to potential negative effects on nesting seabirds of vessels lighting for squid on several of the Channel Islands, the regulations restricted attracting lights to a maximum of 30,000 watts and required that lights be shielded.

In 2001, SB 209 (Sher) was enacted, authorizing the Commission to manage the squid resource and to adopt ~~a market squid fishery management plan, an MSFMP~~. Other features of ~~this bill~~SB 209 included providing that specified provisions will become inoperative upon the adoption by the Commission of ~~a market squid fishery management plan~~an MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.

~~In 2001, the Commission established a harvest guideline of 125,000 tons for the market squid fishery, which was based on the highest seasonal catch level for the fishery; its~~

~~purpose was to prevent volumetric growth of the fishery should market demand encourage such expansion.~~

Table 2-13 Summary of Market Squid Regulations from 1959 to the present

Date	Bill # (Author)	Management Action
1959	§8397	It is unlawful to use any artificial light to lure or attract squid in Districts 16 and 17. This section applies to all artificial lights except those lights necessary for the usual operation of a vessel not used to lure or attract, or intended to lure or attract, squid.
1983	AB 513 (Farr)	Authorizes the Commission to adopt regulations specifying the days of the week and times of the day when squid may be taken north of Point Conception.
1984	CCR Title 14 §149	The Commission adds CCR Title 14 §149, to prohibit any vessel, using or possessing a roundhaul net in Districts 16 and 17, from taking market squid between noon Friday and midnight Sunday and between noon and midnight on any Monday through Thursday.
1987	AB 123 (Farr)	Allows the use of lights to attract squid in District 17.
1988	AB 4055 (Farr)	Allows the use of lights to attract squid in District 16.
1989	SB 1080 (Mello)	Allows the use of all roundhaul nets, including purse seine and half-purse seine nets, to take squid in all portions (including the southernmost portion) of District 16, subject to the same area and season restrictions previously in effect for lampara nets.
1993	AB 14 (Hauser)	Restricts the use of attracting lights in District 10.
1993	SB 1030 (Thompson)	A landing tax of \$0.0019/lb is imposed.

Table 2-13 Summary of Market Squid Regulations from 1959 to the present

Date	Bill # (Author)	Management Action
1997	SB 364 (Sher)	Authorizes the take of market squid north of Pt. Conception between noon on Sunday and noon on Friday. Requires a permit for the take of squid with a dip, purse seine, or lampara net for commercial purposes. Requires a permit to attract squid by light from a vessel. Establishes a fee for a commercial squid light boat owner's permit. Allows for transfer of vessel or light boat owner's permits under certain conditions. A three-year moratorium on commercial squid vessel permits is established; the possession of a permit from the previous year is required in order to renew.
1998	AB 1928 (Morrow)	No permit is necessary, nor is a landing tax imposed, for the take of live bait. Drum seines and other roundhaul nets excepted from prohibition of rings along lead line and pursing of net bottoms.
1998	AB 1241 (Keeley)	Marine Life Management Act passes.
2000	CCR Title 14 §149	Amendment—Prohibits commercial take of market squid between noon on Friday and noon on Sunday from Pt. Conception south to the US-Mexico border. Requires commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities.
2000	CCR Title 14 §149	Amendment—Vessels fishing or lighting for squid are restricted to using no more than 30,000 watts of light. Each vessel fishing or lighting for squid must shield the entire filament of each light, directing the light downward, or the vessel must keep the illumination completely submerged underwater.
2000	SB 1544 (Sher)	Establishes a \$400 fee for a commercial market squid vessel permit. Extends the sunset date for SB364 to 1 January 2004. Extends existing duties imposed on the Department and the Commission and makes an appropriation.
2001	SB 209 (Sher)	Requires the Commission to adopt the MSFMP by 31 Dec 2002, after consideration and public hearings. Requires the Commission to establish fees for commercial market squid vessel permits and commercial squid light boat owner's permits annually commencing April 1, 2003. Prohibits each person who is issued a commercial squid light boat owner's permit from selling, trading or transferring the permit to another person. Provides that specified provisions will become inoperative upon the adoption by the Commission of a MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.

Table 2-13 Summary of Market Squid Regulations from 1959 to the present

Date	Bill #– {Author}	Management Action
2001	CCR Title 14– §149	Proposed regulatory changes establish catch limits in order to protect the squid resource and manage the fishery sustainably; a harvest guideline of 125,000 tons was selected.

Amendment 8 of the CPS FMP placed Pacific mackerel (*Scomber japonicus*), Pacific sardine (*Sardinops sagax*), jack mackerel (*Trachurus symmetricus*), and market squid (*Loligo opalescens*) in a management unit with northern anchovy (*Engraulis mordax*). Managed species are divided into two categories: “Actively managed” and “monitored”. Actively managed species are subject to annual harvest limits based on current biomass estimates. There are no mandatory harvest limits for monitored species; however, other management measures, such as area closures, could apply to monitored species. Initially, Pacific sardine and Pacific mackerel are designated as actively managed species, while jack mackerel, northern anchovy, and market squid are monitored species. However, the CPS FMP required that Maximum Sustainable Yield (MSY) be established for all species in the plan. Setting MSY for market squid is problematic because a biomass estimate has yet to be determined. A proxy for MSY, using egg escapement, has been approved for the market squid fishery. Details of this method are presented in section 3.2. Finally, the PFMC delegated management authority for market squid to the State.

Chapter 3. In 2004, the Commission adopted the MSFMP. The MSFMP was reviewed through an extensive Commission process and was developed under the provisions set forth by California’s MLMA. The MSFMP established a management program for California’s market squid resource and procedures by which the State manages the market squid fishery. The goals of the MSFMP are to manage the market squid resource to ensure long-term conservation and sustainability, reduce the potential for overfishing, and institute a framework for management that is responsive to environmental and socioeconomic changes. The tools implemented to accomplish the MSFMP goals were:

Fishery control rules, including:

- An SCL to prevent the fishery from over-expanding;
- Weekend closures, which provide for periods of uninterrupted spawning;

- Gear regulations regarding light shields and wattage used to attract squid and;
- Monitoring programs designed to evaluate the impact of the fishery.
- A restricted access program, including provisions for initial entry into the fleet, types of permits, permit fees, and permit transferability that produced a moderately productive and specialized fleet.
- A seabird protection measure restricting the use of attracting lights for commercial purposes in any waters of the Greater Farallones National Marine Sanctuary.

Chapter 3. Management Measures for a Sustainable Market Squid Fishery

3.1. ~~3.1~~ Project Objectives

The MLMA sets sustainability as an overall goal for the fishery management system (FGC §7056). Within the definition of sustainability, the MLMA includes not only the maintenance of the fishery populations, but also the fullest possible range of present and long-term benefits (including ecological benefits), and biological diversity (FGC §99.5). The MLMA calls for achieving its primary goal of sustainability by meeting several objectives:

- preventing overfishing;
- rebuilding depressed stocks;
- ensuring conservation;
- promoting habitat protection and restoration.

~~To this end, fishery management plans (FMPs)~~FMPs must identify measures that will be used for the conservation and management of the fishery (FGC §7082). Among other measures, the MLMA identifies area and time closures, size limits, gear restrictions, and restricted access. The Department ~~plans to meet these meets the~~ requirements ~~and the~~ goals, and objectives of the MSFMP using management based on four components: 1) fishery control rules, 2) a restricted access program, 3) ecological considerations, and 4) administrative items. The ~~project will protect~~MSFMP protects the market squid resource and the marine life that depends on squid by minimizing the risk of overfishing, adverse social and economic impacts on the fishing communities whenever possible, and ecological impacts that result from the commercial squid fishery; together ~~this program~~the MSFMP forms an integral approach to meeting ~~the~~ MLMA guidelines. ~~The final project and the implementing regulations adopted by the Commission at the 27 August 2004 and 3-December 2004 meetings are presented in Table 3-1.~~

~~This~~The MSFMP establishes a fisheries management program for market squid and procedures by which the Commission will manage the market squid resource and various fishery components. In addition, ~~the~~MSFMP defines the scope of management authority for the Commission when acting under the MSFMP. Management measures implementing the MSFMP, which directly control fishing activities, must be consistent with the goals and objectives of the MLMA and other applicable laws. Also, ~~they~~management measures must be consistent with federal management requirements in the CPS FMP. - ~~These management~~Management actions are to be considered repeatedly within the streamlined process that provides for more timely Commission

action under certain specific conditions. Procedures in this FMP do not affect the authority of the Director of the Department to take emergency regulatory action under FGC §7710.

3.1.1. ~~3.1.1~~ Fishery Control Rules

Fishery control rules provide a protocol for managing sustainable levels of market squid fishing that is enforced through the adoption of specific regulatory tools such as ~~seasonal catch limits~~an SCL, gear restrictions, weekend closures, and sustainable levels of egg escapement. The-~~application of the~~ MLMA concept of adaptive management is particularly relevant to ~~this~~the fishery because information regarding the biology of market squid is limited, and no reliable estimate of market squid abundance is available. Control rules established in the amended MSFMP include:

- ~~3.1.2~~ Seasonal Statewide Catch Limitation – Maintain an SCL based on recent average catch and the assumption that squid biomass is above average spawning biomass (currently set at 118,000 tons).
- Weekend Closures – Full fishery closures from 0700 Friday to noon Sunday from the U.S.-Mexico border to the California-Oregon border with an extended closure from noon to midnight Sunday in the Monterey Bay Area (a line due west from Point Lobos (36° 31.461' North Latitude) to a line due west from Pigeon Point (37 ° 11.000' North Latitude)).
- Monitoring Program - Continue existing squid monitoring programs (biological sampling and fishery logbooks). Support the development of an electronic logbook (e-log) for the California market squid commercial fishery.
- Live Bait Fishery and Incidental Catch of Market Squid – An exemption from the squid fishery permit requirement when fishing for live bait or incidental take two tons or less.
- Gear Restrictions –
 - Limit the total squid light wattage to 30,000 watts.
 - Require that squid lights reduce light scatter by shielding the entire light emitting portion of each light used to attract squid and orient the illumination directly downward so that the lower edge of the shield is parallel to the deck of the vessel.
 - Require that any purse seine used to take squid or onboard a vessel possessing squid be fitted with and pursed with a soft, non-metallic, rib line.

3.1.2. Restricted Access Program

The MSFMP ~~bases its approach to restricted~~restricts access to the fishery based upon the MLMA and the Commission's restricted access policy, ~~and~~ establishes aalong with the established capacity goal (the optimum number

of vessels in the fleet that will promote resource sustainability and economic viability of the fishery), ~~initial issuance criteria~~, and transferability conditions for the commercial market squid fishery.

3.1.3. ~~3.1.3~~ Ecological Considerations

The market squid fishery is part of a larger ecosystem that includes the effects of ecological interactions of the project on non-target species and habitat. In addition, the market squid resource is a significant forage component in the diets of seabirds, marine mammals and fish. Harvest replenishment and general habitat closure areas provide for specific areas where no squid fishing can occur. Harvest ~~Replenishment Areas~~ replenishment areas can provide areas of uninterrupted spawning. General habitat closures are intended to prevent squid fishery interactions in areas that have not been traditionally utilized for commercial squid fishing and where there is the potential for interactions with non-target species such as salmon, seabirds, and marine mammals. Gear restrictions, including the use of a rib line, are implemented in order to reduce impact to squid egg beds. Seabird closure areas reduce the potential for interactions between the squid fishery and seabirds that are sensitive to disturbance from lights and noise.

3.1.4. ~~3.1.4~~ Administrative Items

This category contains items that are administrative in nature to the MSFMP, namely the creation of a squid advisory committee.

Table 3-1. Summary of Management Measures as Identified in the Draft MSFMP Adopted by the Commission 27 August 2004 and 3 December 2004.	
FISHERY CONTROL RULES	
Seasonal Statewide Catch Limitation	
	Establish a seasonal catch limitation based on recent average catch and the assumption that squid biomass is above average spawning biomass (currently set at 118,000 tons) to be reviewed in two years (Option A.2).
Weekend Closures	
	Continue closures from noon Friday to noon Sunday from the U.S.-Mexico border to the California-Oregon border (Option D.1)
Monitoring Program	
	Continue existing squid monitoring programs (port sampling and logbooks) (Option E.1).
Live Bait Fishery and Incidental Catch of Market Squid	
	Continue existing regulations that do not require a squid permit when fishing for live bait or incidental take two tons or less (Option F.1).
Gear Restrictions	
	Maintain existing gear options regarding wattage (30,000 watts) (Option G.1)

Table 3-1. Summary of Management Measures as Identified in the Draft MSFMP Adopted by the Commission 27 August 2004 and 3 December 2004.—	
	Establish gear restrictions which state that each vessel fishing for squid and lighting for squid will utilize shielding that will reduce the light scatter of its fishing operations by shielding the entire filament of each light used to attract squid and orient the illumination directly downward so that the lower edge of the shield will be parallel to the deck of the vessel (Option G.4)
RESTRICTED ACCESS PROGRAM	
Market Squid Fleet Capacity Goal	
	Establish a capacity goal for market squid vessels that produces a moderately productive and specialized fleet (55 vessels, 18 brail vessels and 34 light boats, capacity goal for non-transferable permits is zero) (Option H.3)
Initial Issuance of Permits—	
	Transferable Permits: Market Squid Vessel Permit: possession of a current market squid vessel permit (2004-2005) and a minimum of 50 landings in window period January 1, 2000 through March 31, 2003; Brail Permit: Possession of a current market squid vessel permit (2004-2005) and a minimum of 10 landings made with brail gear in window period January 1, 2000 through March 31, 2003; Light Boat Permit: Possession of a current market squid permit (either vessel or light for 2004-2005) and have submitted one light boat log by December 31, 2000. Non-Transferable Permits: Market Squid Vessel Permit: Possession of a current market squid vessel permit (2004-2005), possession of a California commercial fishing license for at least 20 years and a minimum of 33 landings prior to August 27, 2004. Only receipts that demonstrate catch aboard a vessel that does not already qualify for issuance of a transferable permit of any permit class are eligible.— Brail Permit: Possession of a current market squid vessel permit (2004-2005), possessed a California commercial fishing license for at least 20 years and made a minimum of 10 landings with brail gear during one fishing season in a window period from January 1, 2000 through March 31, 2003. Only receipts that demonstrate catch aboard a vessel that does not already qualify for issuance of a transferable permit of any permit class are eligible. Light Boat Permit: There is not a non-transferable permit category (Option I.1).
Permit Fees	
	Annual permit fees:- Market Squid Vessel Permit—Transferable = \$2,000 Market Squid Vessel Permit—Non-Transferable = \$1,000 Market Squid Brail Permit—Transferable = \$2,000 Market Squid Brail Permit—Non-Transferable = \$1,000 Market Squid Light Boat Permit—Transferable = \$600 -(Option J.2)
Market Squid Vessel Permit Transferability—	
	Establish full transferability of market squid vessel permits based on comparable capacity (within 10%); establish transferability of market squid vessel permits to a vessel of larger capacity under a “2 for 1” permit retirement; individuals wishing to gain entry into the fishery must secure two permits (Option K.3)
Market Squid Brail Permit Transferability—	
	Establish full transferability of market squid brail permits based on comparable capacity (Option L.3)

Table 3-1. Summary of Management Measures as Identified in the Draft MSFMP Adopted by the Commission 27 August 2004 and 3 December 2004.	
Market Squid Light Boat Owner's Permit Transferability	
	Establish full transferability of light boat owner permits with a '1 for 1' permit retirement (Option M.3)
	Upgrade 2-1 light boat owner permits for one brail permit (Option M.4)(Revised by Commission 22 March 2005).
Transferability Fee	
	Establish a transfer fee of \$500 (Option N.1). Establish a Market Squid Brail Permit Upgrade Fee of \$1,500.
Experimental Market Squid Vessel Permits	
	Establish three non-transferable experimental fishery permits (Option O.2).
ECOLOGICAL CONSIDERATIONS	
Area and Time Closures to Address Seabird Issues	
	Establish areas closed to squid vessels using attracting lights in all waters of the Gulf of the Farallones National Marine Sanctuary (Option R.9).
ADMINISTRATIVE ITEMS	
Market Squid Advisory Committee	
	Establish one advisory committee for the squid fishery, which includes scientific, environmental, and industry representatives (Option S.1).

3.2. ~~3.2~~ Fishery Control Rules

3.2.1. ~~3.2.1~~ Definition of Maximum Sustainable Yield and Optimum Yield

Fishery control rules are the primary mechanism for achieving sustainable use, preventing overfishing, preserving habitat, rebuilding depressed stocks, and recognizing the importance of non-consumptive uses. In addition, control rules must be based on objective, measurable criteria such as population size, productivity, density, or other inputs. Formulas are often used to calculate an allowable catch (fishing mortality); however, control rules do not have to be cast in terms of fishing mortality rates or biomass levels. In general, ~~the~~ fishery control rules help identify key management measures appropriate to the fishery.

The MLMA defines ~~maximum sustainable yield (MSY)~~ as "the highest average yield over time that does not result in a continuing reduction in stock abundance, taking into account fluctuations in abundance and environmental variability" (FGC §96.5). The MSY model determines catch limits, which most often are expressed as a fixed fishing rate such that a constant fraction of the stock may be harvested each year. It is specific for each species or stock of fish and is calculated from knowledge of abundance, life history, and population dynamics. Environmental factors are also considered since they affect growth, reproduction, and mortality rates. In many cases, providing a range of estimates for MSY may be reasonable since there are different assumptions in the model. In addition, ~~there may be~~

~~situations where the~~ scientific information ~~is~~may be inadequate to directly calculate MSY for a particular species, and a proxy or substitute ~~may be~~is used. For example, recent average catch may be used as a proxy for MSY if a period is chosen when there is no evidence of long-term declining abundance.

The MLMA additionally defines Optimum Yield (OY) to give specific direction for resource managers:

“Optimum yield, with regard to a marine fishery, means the amount of fish taken in a fishery that does all of the following: (a) provides the greatest benefit to the people of California, particularly with respect to food production and recreational opportunities, and takes into account the protection of marine ecosystems; (b) is the maximum sustainable yield of the fishery, reduced by relevant economic, social, or ecological factors; (c) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing maximum sustainable yield in the fishery” (FGC §97).

It is not uncommon that the status of knowledge for a given stock is limited to the catch history and incomplete life history information. This fact is acknowledged by the Legislature in both the MLMA [see FGC §90.1, 7056(g), 7059, 7060, 7072(b), 7073(b) 7081] and in the squid statutes [see FGC §8420(b), 8426(c)]. A precautionary approach to calculating OY in data-moderate or data-poor situations is to multiply MSY, or its proxy, by a fraction. A tenet of this principle is that less aggressive (more restrictive) harvest policies are adopted as uncertainty increases concerning the status of stocks and ~~their~~the stock's response to fishing pressure (Restrepo et al. 1998). And, as mentioned above, an alternative approach is to select a proxy when information needed to calculate MSY is lacking.

3.2.2. ~~3.2.2~~ Proxy for MSY and Precautionary OY

~~There often~~ MSY is insufficient knowledge to calculate MSY. not always calculatable for data limited fisheries or for species with a natural mortality of one year or less. Restrepo et al. (1998) ~~provide~~provided an alternative approach for federal fisheries management, and the State used a variant of the Restrepo approach in the ~~interim~~ regulations for the market squid fishery.

A proxy for MSY is calculated when MSY-related parameters cannot be estimated from available data or when estimated values are deemed unreliable for various reasons (e.g., extremely low precision, insufficient contrast in the data, or inadequate models). The proxy for MSY in data-poor and data-moderate situations ~~in this approach~~ is based on the historical average catch, selecting a period when ~~there is no indication that~~ abundance is not declining. A proxy for OY is then determined by reducing

the proxy MSY by a percentage that can vary depending on the amount of information available. As uncertainty decreases about the status of stocks and their response to fishing pressure, less precautionary management can be adopted. This approach to risk management reduces the chance of inadvertent overfishing when little is known about the status of a stock.

~~There are no~~No definitions or standards for measuring the level of data richness exists for a fishery other than the general guidance provided in Restrepo, et al. (1998), although it is important to remember ~~these~~the guidelines were established for fish that are considered long-lived in comparison with the market squid, which only ~~lives 6 months~~: live less than one year:

- Data-rich cases: Reliable estimates of MSY-related quantities and current stock size are available. Stock assessments may be sophisticated, and provide a reasonably complete accounting of uncertainty;
- Data-moderate cases: Reliable estimates of MSY-related quantities are either unavailable or of limited use due to peculiar life history, poor data contrast, or high recruitment variability, but reliable estimates of current stock size and all critical life history (e.g., growth) and fishery (e.g., selectivity) parameters are available. Stock assessments may range from simple to sophisticated and uncertainty can be reasonably characterized and quantified;
- Data-poor cases: Reliable estimates of MSY-related quantities are unavailable, as are reliable estimates of either current stock size or certain critical life history or fishery parameters. Stock assessments are minimal, and measurements of uncertainty may be qualitative rather than quantitative.

3.2.3. ~~3.2.3~~ Seasonal Catch Limitation

3.2.3.1. ~~3.2.3.1~~ A Proxy for MSY Based on Historical Landings

~~Due to the lack of adequate data to make a mathematical MSY determination, guidance was~~Guidance taken from NOAA Fisheries (Restrepo et al. 1998). ~~These guidelines~~ propose that ~~in data-poor situations for species~~ such as ~~the~~ market squid fishery, a proxy may be used for MSY, and ~~that it is reasonable~~ to use recent average catch from a period when ~~there is~~ no qualitative or quantitative evidence of declining abundance. was observed.

El Niño events are a recurring phenomenon of the ~~California Current~~CCE and thus, are a factor in landings when considering MSY. Historic market squid data indicate that low landing periods correspond with El Niño events when

availability of squid to the fishery is greatly reduced. In addition, market conditions are volatile and influenced by the international demand and availability of supply from other fisheries. ~~In the period between the last two El Niño events (1993-1994 and 1997-1998) there was a nearly unlimited demand~~ Demand for California market squid ~~infrom~~ the Republic of China during the period between the 1993-1994 and 1997-1998 El Niño events increased significantly, a situation that kindled rapid development of fishing and expansion of processing for export. The expansion ended with the onset of the 1997-1998 El Niño event during which market squid availability dropped to very low levels and landings declined.

The first fishing season (1999-2000) following the 1997-1998 El Niño event resulted in the highest squid landings on record (Table 3-~~2~~-1). Nearly all of the landings were from the southern California fishery (99.7%); landings reported from the northern fishery were minimal (0.3%). ~~This~~The disparity ~~could~~between southern and northern landings was not ~~have been~~ predicted given the ~~current~~ understanding of ~~the~~ market squid ~~ex~~fishery at the time, nor by utilizing temperature inclusive models. Average landings ~~for the last ten, five, and three years~~from 1991 to 2003, used as the proxy for market squid ~~MSY~~, are presented in Table 3-~~2~~. ~~These averages can be used as a proxy for MSY~~1.

~~3.2.~~Table 3-1. Market Squid landings by season, 1991-1992 through 2002-2003 and average landings based on 10, 5, or 3 years using different seasons. Averages are rounded to the nearest thousand.

Season	Total landings (tons)	10-yr Avg. ('93-'94 to '02-'03)	5-yr Avg. ('98-'99 to '02-'03)	3-yr Avg. ('00-'01 to '02-'03)	10-yr Avg. ('92-'93 to '01-'02)	5-yr Avg. ('97-'98 to '01-'02)	3-yr Avg. ('99-'00 to '01-'02)
1991-1992	38,666	--	--	--	--	--	--
1992-1993	18,793	--	--	--	18,793	--	--
1993-1994	54,452	54,452	--	--	54,452	--	--
1994-1995	63,592	63,592	--	--	63,592	--	--
1995-1996	93,833	93,833	--	--	93,833	--	--
1996-1997	124,309	124,309	--	--	124,309	--	--
1997-1998	10,898	10,898	--	--	10,898	10,898	--
1998-1999	11,699	11,699	11,699	--	11,699	11,699	--
1999-2000	126,772	126,772	126,772	--	126,772	126,772	126,772
2000-2001	123,411	123,411	123,411	123,411	123,411	123,411	123,411
2001-2002	102,715	102,715	102,715	102,715	102,715	102,715	102,715
2002-2003	46,994	46,994	46,994	46,994	--	--	--
Average (rounded)	68,000	76,000	82,000	91,000	73,000	75,000	118,000

3.2.3.2. ~~2~~ Establishment of a Seasonal Catch Limitation

The Commission ~~has~~ established a statewide SCL using a 3-year average catch from the 1999-2000 to 2001-2002 fishing seasons (Table 3-1). The seasonal catch limitation ~~based on a multi-year recent average catch (see Table 3-2).~~ This approach assumes ~~assumed~~ that the stock ~~is~~was above the average spawning biomass (B_{MSY}) and ~~uses~~used a precautionary multiplier of 1.0. ~~This limitation~~The SCL is currently set at 118,000 tons.

The ability of the market squid fishery to support landings of greater than 100,000 tons in the 1999-2000 season with repeat landings of the same magnitude in the following two seasons suggests that the stock is robust enough to withstand ~~this~~the level of landings. This is likely due to the semiannual lifespan and the presence of several (minimum seven) cohorts throughout the year. ~~Therefore, a~~A multiplier of 1.0 was chosen to be most appropriate for market squid as opposed to more precautionary OY multipliers since traditional assessment methods are normally used for much longer-lived fish species.

Table 3.2. Market Squid Landings by Season 1991–1992 through 2002–2003 and Average Landings based on 10, 5, or 3 years using different seasons. Averages are rounded to the nearest thousand.

Season	Total landings (short-tons)	10-yr Ave. (93-94 to 02-03)	5-yr Ave. (98-99 to 02-03)	3-yr Ave. (00-01 to 02-03)	10-yr Ave. (92-93 to 01-02)	5-yr Ave. (97-98 to 01-02)	3-yr Ave. (99-00 to 01-02)
1991–1992	38,666	-	-	-	-	-	-
1992–1993	18,793	-	-	-	18,793	-	-
1993–1994	54,452	54,452	-	-	54,452	-	-
1994–1995	63,592	63,592	-	-	63,592	-	-
1995–1996	93,833	93,833	-	-	93,833	-	-
1996–1997	124,309	124,309	-	-	124,309	-	-
1997–1998	10,898	10,898	-	-	10,898	10,898	-
1998–1999	11,699	11,699	11,699	-	11,699	11,699	-
1999–2000	126,772	126,772	126,772	-	126,772	126,772	126,772
2000–2001	123,411	123,411	123,411	123,411	123,411	123,411	123,411
2001–2002	102,715	102,715	102,715	102,715	102,715	102,715	102,715
2002–2003	46,994	46,994	46,994	46,994	-	-	-
Average (rounded)	68,000	76,000	82,000	91,000	73,000	75,000	118,000

Setting a seasonal catch limitation will serve an SCL serves to curtail growth of the fishery, should market demand allow for such expansion. It is prudent not to allow landings to expand beyond present levels without better methods to assess the status of the resource. Given the number of squid vessels

~~permitted during the moratorium and significant excess capacity in the fleet, dramatic increases in catch could occur in a short time frame unless a safeguard is in place. Catch trends indicate that the market squid resource appears to be quite robust and is able to sustain the recent catch levels.~~

3.2.3.3. ~~3.2.3.3~~ The Use of Egg Escapement as a Proxy for MSY

As was mentioned above, ~~because~~ no biomass estimate exists for market squid, ~~it nor~~ is ~~not~~ it possible to define an overfished condition for ~~this~~ the species. It is important to recognize that setting an actual MSY for market squid is impractical for the squid fishery because ~~fishery and biological data are inadequate~~ the species is short-lived, and landings are strongly influenced by market demand rather than effort. ~~However, if a minimum threshold for egg escapement is not realized, it can be considered that an overfished condition may exist, or that catches of squid exceed any specified allowable level.~~ Overfishing is defined as harvests of squid are occurring at times when either the egg escapement threshold is not being met, or that catches are exceeding specified allowable levels ~~and that these catches may not be sustainable.~~

~~Consequently, the egg escapement method will also be used as a proxy for MSY/OY. This method of assessing fishery impacts to the squid resource is identified in Amendment 10 of the Federal CPS FMP (PFMC 2002) and brings the state in compliance with federal regulations. The egg escapement method of regulating the fishery relies on the Department to monitor the squid fishery at an appropriate level in order to collect adequate biological information. The egg escapement model, as a proxy for MSY, is only a temporary measure until an acceptable biomass estimate can be determined for market squid. If a biomass estimate cannot be determined for market squid, agencies will continue to improve and refine the egg escapement method. This process of re-evaluation of the egg escapement model is ongoing through the PFMC CPS Management team.~~

3.2.4 Weekend Closure for Commercial Market Squid Fishery

~~The Commission has decided to continue closures beginning noon Friday through noon Sunday from the U.S.-Mexico border to the California-Oregon border. This weekend closure allows for two days of uninterrupted spawning in areas where squid are being harvested. This provides protection to the resource by allowing spawning to occur and egg cases deposited without disturbance from the fishery. This also includes the use of attracting lights on weekends for commercial harvest. Unlike a seasonal quota or closure, this measure spreads the spawning escapement throughout the year, rather than concentrating it during one particular period.~~

Consequently, the egg escapement method will also be used as a proxy for MSY/OY.

~~The egg escapement~~~~Prohibiting fishing activity on weekends may also help alleviate conflict with other interest groups (e.g., divers, recreational fishermen, commercial passenger fishing vessels, etc.) operating in the same area. For example, the weekend closure has probably reduced the amount of interactions between the fishery and recreational divers wanting to observe squid spawning events.~~

3.2.5 Monitoring Programs

~~The Commission has decided to continue the existing squid monitoring programs, including fishery-dependent sampling efforts and ongoing monitoring of catch information, especially those focused on developing management models. The fishery-dependent sampling is essential for real time monitoring of the market squid fishery through the egg escapement method. The adopted project also maintains the Department's logbook system for squid vessels and light boats. These records provide valuable catch information other than landing data, and are critical to model the market squid population.~~

~~These monitoring programs (port sampling and logbooks) are designed to learn more about the fishery and resource and are intended to aid in the development of population models to sustain harvests. This method of assessing fishery impacts to the squid resource is identified in Amendment 10 of the Federal CPS FMP (PFMC 2002) and brings the state in compliance with federal regulations. The egg escapement method of regulating the fishery relies on the Department to monitor the squid fishery at an appropriate level to collect adequate biological information. The egg escapement model, as a proxy for MSY, was intended to be a temporary measure until an acceptable biomass estimate can be determined for market squid. Since an accurate biomass estimate cannot be determined for market squid, agencies will continue to utilize and improve the egg escapement method.~~

~~3.2.4.~~ ~~3.2.6 Live-Bait~~ **Weekend Closure for Commercial Market Squid Fishery**

~~The current weekend closure begins noon Friday and Incidenta-~~
~~Catch~~~~continues through noon Sunday from the U.S.-Mexico border to the~~
~~California-Oregon border. The weekend closure allows for two days of~~
~~uninterrupted spawning in areas where squid are harvested. The closure~~
~~provides protection to the resource by allowing spawning to occur and egg~~
~~cases to be deposited without disturbance from the fishery. The use of~~
~~attracting lights is not allowed during the weekend closures for commercial~~
~~harvest per CCR Title 14 § 149, with an exception for vessels actively engaged~~
~~in the commercial take of squid for sale as live bait. Unlike a seasonal quota~~
~~or closure, a weekend closure spreads the spawning escapement~~
~~throughout the year, rather than concentrating spawning escapement~~
~~during one particular period. Furthermore, without the ability to establish a~~

biomass estimate for squid and the fact that landings scale with effort, temporal closures that allow uninterrupted spawning (i.e., the weekend closure) as opposed to catch controls (i.e., SCL or daily catch limits) are considered more effective when squid abundance is low.

Prohibiting fishing activity on weekends may also help alleviate conflict with other interest groups (e.g., divers, recreational fishermen, commercial passenger fishing vessels~~Market Squid~~), allows for other activities operating in the same area, and reduces potential disturbance to seabirds.

In 2021, a petition was submitted to the Commission requesting a weekend closure extension and incorporation of half-day closures on weekdays in the Monterey Bay Area. The rationale for the proposed change was the concern that increased fishing pressure in the Monterey Bay Area was not allowing enough time for squid to spawn. The petition was referred to the SFAC process.

Extension of the weekend closure was discussed during the 2023-2024 SFAC process. After review of Empirical Dynamic Modeling (EDM) results, monitoring data, and feedback from the SFAC, an extension to the front end of the weekend closure Statewide and an extended Sunday closure in the Monterey Bay Area was recommended. The extended closure provides an added buffer for sustainability, is unlikely to negatively impact overall yields, and is enforceable.

The exemption for lighting on the weekend when taking market squid as live bait was amended to make the provision clearer and more enforceable. The change is intended to ensure vessels do not use lights for other purposes, while claiming to be engaged in the take of live bait. The amendment clarifies that lighting on the weekend is only allowed when actively taking market squid for live bait. Revisions to the regulation specify that live market squid must be kept in a condition to be sold as live bait and returned to the water if it is not sold as live bait. Also, vessels engaged in the take of market squid for live bait must notify the Department in advance, to indicate their intent to take live bait during a weekend closure.

3.2.5. Monitoring Programs

Commercial fisheries landings data, collected since 1969, are now submitted by fish businesses through electronic fish tickets (E-tix). A separate market squid fishery logbook program includes effort and location information submitted on paper logs by vessel operators. A dockside sampling time series

began in 1998. Department staff monitor offloads at the docks and subsample squid for processing in a laboratory. The dockside sampling program supports bycatch monitoring and provides inputs for the egg escapement modelling as a measure of relative spawning potential over time.

3.2.4.3.2.6. Live Bait Fishery and Incidental Catch of Market Squid

The Commission ~~has~~ decided not to require a ~~market squid vessel permit~~Market Squid Vessel Permit when fishing for live bait or when landing or taking market squid less than two tons incidentally in any calendar day. Market squid are an important source of live bait for the California

recreational fishing industry. A relatively small volume is taken by the live bait industry using brail, lampara, or drum seine gear. This fishery is a high value use of squid, supplying bait to recreational fisheries along the West Coast, primarily in southern California. Live bait catch, largely dependent on local availability, is sold by vessels either at sea or at live bait dealerships in several harbors statewide. Since the sale of live bait in California ~~is was~~ not previously documented in a manner similar to that used for the ~~market commercial~~ landings of squid, accurate estimates of tonnage and value are not available. Some operators record scooping live squid for sale as bait in market squid logbooks. Since 2019, reporting requirements to submit landing receipts has provided data on live bait catch.

~~FGC §8421(b) does not require vessels taking or landing market squid for commercial purposes to have a market squid permit if the catch does not exceed two tons in any calendar day.~~ Because squid frequently school with CPS finfish, mixed landings of market squid and CPS finfish are common. With ~~a seasonal catch limitation an SCL~~ in place, once the catch limit is reached, an allowance for incidental catch of market squid from other commercial fisheries is needed. ~~This and~~ would prevent ~~the~~ squid from being discarded.

3.2.5.3.2.7. 3.2.7 Gear Restrictions

The Commission chose to maintain ~~existing~~ lighting restrictions, which state that each vessel fishing for squid or lighting for squid will utilize a total of no more than 30,000 watts of light to attract squid at any time. ~~And, as~~ As part of those restrictions, each vessel fishing for squid or lighting for squid will reduce the light scatter of its fishing operations by shielding the entire filament ~~or for device capable of emitting light for~~ each light used to attract squid and orient the illumination directly downward, or provide for the illumination to be completely below the surface of the water.

In addition, the Commission chose to modify existing shielding regulations to require that the lower edges of the shield be parallel to the deck of the vessel ~~in order~~ to provide the maximum shielding possible to reduce impacts to seabird or coastal communities ~~(Option G.4).~~ Since light shields are currently required, there would not be any significant change in net economic benefits and fishery community economic activities while reducing impacts to seabirds and coastal communities.

3.3 Department data show nets are at times interacting with bottom habitats, egg beds, benthic species, and prohibited species. As a result, the Department determined it prudent to consider additional measures as guided by the MLMA to minimize adverse effects on habitat caused by fishing. A rib line creates a “ribbing” or additional webbing between the leadline and the purse line. When contacting the bottom, this causes the net to flutter or bounce as opposed to dragging. The rib line is intended to reduce the likelihood of pursing benthic bycatch, including squid eggs, and to reduce the impact on the sandy bottom habitat, while also preserving the integrity of and preventing damage to the net. Observations of squid eggs in the offloads were roughly half as likely when vessels had a rib line.

3.2.6-3.2.8. **Restricted Access Program (Limited Entry) Program**

~~Restricted access~~The goal of the limited entry program was to produce a moderately productive and specialized fleet. Limited entry programs are designed to match fishing effort with the sustainability of the resource and to address economic issues associated with excess harvest capacity in open access fisheries. ~~In a fishery such as the market squid commercial fishery, the main objective of a restricted access program would be to assure the greatest economic viability from the harvest of market squid.~~

~~Prior to the 1998–1999 season, the squid fishery was an open access fishery. In 1996, new demand and markets for squid attracted many fishing vessels from other states. This influx of fishing vessels and increased competition has resulted in conflict and territorial disputes between “local” and out of state fishermen.~~

~~A restricted access program for the squid fishery should serve to balance the need to provide a viable economic harvest with the need to protect the squid resource. Access into the market squid fishery may be restricted by issuing only a certain number of permits (limited entry). In the absence of a biomass estimate for market squid, a limited entry program, in conjunction with a seasonal catch limit, monitoring the fishery through the egg escapement method and weekend closures should collectively provide for a sustainable squid resource and fishery.~~

~~3.3.1 Summary of Commission Restricted Access Policy and the Market Squid Fishery~~

~~California's fisheries are to be protected, conserved, and managed for the public benefit, which may include food production, commerce and trade, subsistence, cultural values, recreational opportunities, maintenance of viable ecosystems, and scientific research. None of these purposes need be mutually exclusive and, ideally, as many of these purposes should be encouraged as possible, consistent with resource conservation.~~

~~If harvest and other human-caused factors affecting the sustainability of the squid fishery are not managed, fishery resources may be less than optimally productive or, in the worst case, may suffer serious declines. Restricting access to a fishery has become one of many standard fishery management tools used by public agencies in carrying out their conservation and management responsibilities for publicly held fishery resources. It is the policy of the Commission to design restricted access programs to enhance the State's ability to manage its commercial fishery resources. Restricted access programs should: 1) contribute to sustainable fisheries management by providing a means to match the level of effort in a fishery to the health of the fishery resource and by giving fishery participants a greater stake in maintaining sustainability; 2) provide a mechanism for funding fishery management, research, monitoring, and law enforcement activities; 3) provide long term social and economic benefits to the State and fishery participants; and 4) broaden opportunities for the commercial fishing industry to share management responsibility with the Department.~~

~~More specifically~~Specifically, the Commission's purposes for restricting access or entry to a fishery are described as: (1) promote sustainable fisheries; (2) provide for an orderly fishery; (3) promote conservation among fishery participants; and (4) maintain the long-term economic viability of fisheries.~~Restricted access programs may be instituted in order to carry out one or more of these purposes in a given fishery.~~

~~Because a primary purpose of restricted access programs is to match the level of effort in a fishery to the health of the fishery resource, each restricted access program that is not based on individual transferable quotas shall identify a fishery capacity goal intended to promote resource sustainability and economic viability of the fishery. Fishery capacity goals can be expressed as some factor or combination of factors that fairly represents the fishing capacity of the fleet. These factors may include the number of permitted fishery participants, number of permitted boats, net tonnage of the permitted fleet, amount of gear used in the fishery, and cumulative hold capacity. Fishery capacity goals should be based on such biological and economic factors as what is known about the size and distribution of the target species, historic fleet size or harvest capacity, and distribution of harvest within the current fleet. Conflicts with other fisheries or ocean interest groups and economic conditions (current and future) within the fishery may also be factored in to such determinations. Depending on the fishery, the fishery capacity goal may be expressed as a single number or as a range.~~

3.2.7. Rationale for Implementation of a Limited Entry Program for the Market Squid Fishery

~~Vessels currently participating in the market squid fishery are capable of harvesting more squid than is available under current or likely future biomass conditions.~~ Fisheries characterized by excess harvesting capacity are described as overcapitalized in terms of the number of vessels and the amount of gear and equipment devoted to harvesting. ~~As fisheries become~~ if the fishery becomes overcapitalized, harvesting costs increase while catches remain the same. This situation represents an economically inefficient use of society's productive resources, and causes several problems for managers and the fishing industry when abundance and demand decline, and catches are reduced. ~~As harvesting capacity in fisheries increases, problems arising from the need for more restrictive management measures and resolution of allocation issues become more acute. No relief from these problems will occur if harvesting capacity continues to rise.~~ Taking action to reduce excess capacity before a resource reaches depleted status is a proactive management strategy that may thwart or alleviate potential problems with resource allocation in the future. At the time of its conception, the limited entry program for the market squid fishery was widely supported by most members of the SFAC, the SRSC, and other squid fishing industry and conservation groups, with some processors and fishermen in opposition.

The fleet size in 2005 was 165 squid vessels and 40 light boats. Eligibility was determined after purchase of a permit in the initial 1998-1999 season. Any licensed individual could participate during this initial year if the fisherman presented evidence that he or she had been a licensed California commercial fisherman for at least 20 years and had participated in the market squid fishery. There were three components to the Commission's policy to determine qualification: (1) initiating the program would not increase the recent level of fishing effort, (2) initial issuance of permits would only be to the current owners of qualifying vessels and, (3) to meet the needs of a fishery, it may be desirable to modify the approach of giving permits to current owners of qualifying vessels.

3.2.7.1-3.2.8.1. Scope of the Market Squid Limited Entry Program

Vessels landing less than two tons of squid incidentally on a per trip basis will not be required to possess a limited entry permit. Additionally, landing of squid beyond the jurisdiction of the state of California will not be affected by any limited entry requirements. Recreational fishing for squid will not require a limited entry permit, nor does fishing for squid for use as live bait.

~~Evaluating the capacity of the current market squid fishery can be used to provide a basis for establishing a restricted access program that matches the level of effort in a fishery to the health of the fishery resource. The goal of such a program is to maintain a sustainable squid resource and provide for a fishery that is diverse, stable, and profitable. With the establishment of the moratorium in 1998, many vessels applied for permits that were not previously active in the squid fishery. These purchases led to a situation where excessive and currently unutilized capacity has been present among permitted vessels of the fleet. During peak landing periods, the number of active vessels was still significantly below the number of currently permitted vessels.~~

~~The Commission has adopted a capacity goal for market squid vessels that produces a moderately productive and specialized fleet of 55 market squid vessel permits, 18 market squid brail permits, and 34 light boat permits. A capacity goal of 55 market squid vessels instead of the 52 originally proposed was adopted to include the addition of three experimental non-transferable fishery permits (Option O.2). The adopted program sets the capacity goal for light vessels at 52 light boats. The adopted project supports a brail fleet capacity goal of 18 vessels as part of the total light boat capacity goal of 52 vessels.~~

~~3.3.3 Initial Issuance of Market Squid Fleet Permits~~

~~Establishing limited entry qualifying criteria is a first step in reducing fleet size from the 165 squid vessels and 40 light boats currently permitted to achieve the selected capacity goal. A capacity goal is a target value that may be disruptive if implemented immediately. Providing initial qualifying criteria, implementing provisions for permit transferability, and encouraging additional attrition are mechanisms to help reduce the number of vessels in order to achieve the capacity goal in a less disruptive manner. Senate Bill 364 (1997) served as an initial notice of intent that a restricted access program was to be considered for the market squid fishery. This legislation established a squid fishery permit system; the system issued vessel owner permits, and permit renewal required possession of a permit the previous season (moratorium). This moratorium of squid permits further served to alert squid fishermen of the potential for a restricted access program.~~

~~The Commission's policy to determine qualification for an initial permit has three elements. First, the policy for all restricted access fisheries assumes that initiating a restricted access program will not increase the recent level of fishing effort. Second, initial issuance of permits will only be to the current owners of qualifying vessels. Third, in order to meet the needs of a particular fishery, it may be desirable to modify the approach of giving permits only to current owners of qualifying vessels.~~

~~FGC §8101 permits any licensed fisherman to participate during the initial year of a limited entry program regardless of the prescribed conditions for entry if the fisherman presents to the Department satisfactory evidence that he or she has been licensed as~~

~~a California commercial fisherman for at least 20 years and has participated in the specific fishery. Further, the fisherman must demonstrate qualifying participation in the fishery through landings or other appropriate criteria determined by the Commission.~~

~~Developing light boat initial issuance criteria based on historical participation is particularly problematic given that light boat participation was not formally documented prior to the logbook program. When the permit program was initiated, light boats could possess either a market squid vessel permit or a squid light boat owner's permit to use attracting lights. A number of currently active light boats hold market squid vessel permits rather than light boat owner permit's based on the design of the permit structure during the 1998-2004 moratorium period. Beginning in 2000, the Department has operated a market squid logbook program, which documents light boat activity, and used these submitted logbooks as documented participation in the squid fishery.~~

~~The Commission adopted a limited entry program for the California market squid fishery following the Commission's own established guidelines and policies for restricted access commercial fisheries. Limited entry was widely supported by most members of the SRSC, the SFAC, and other squid fishing industry and conservation groups, with some processors and fishermen initially in opposition. During the adoption process, a group of both fishermen and processors got together and decided which elements to support as a group, which the Commission adopted.~~

Five major squid fishery permit categories ~~were adopted for initial issuance criteria~~have been established: 1) transferable market squid vessel owner permits, 2) non-transferable market squid vessel owner permits, 3) transferable market squid brail permitsMarket Squid Brail Permits, 4) non-transferable market squid brail permitsMarket Squid Brail Permits, and 5) market squid light boat owner permits. Initial issuance of these permits was set under the following criteria:

Transferable Permits:

- ~~• Market Squid Vessel Permit: possession of a current market squid vessel permit (2004-2005) and a minimum of 50 landings in window period 1 January 2000 through 31 March 2003;~~
- ~~• Brail Permit: Possession of a current market squid vessel permit (2004-2005) and a minimum of 10 landings made with brail gear in window period 1 January 2000 through 31 March 2003;~~

~~Light Boat Permit: Possession of a current market squid permit (either vessel or light for 2004-2005) and have submitted one light boat log by 31 December 2000.~~Permits.

Any vessel engaged in taking squid, landing squid, or attracting squid by light for commercial purposes must have a valid market squid permit. Vessels taking squid for live bait purposes only are exempt from the permit

requirements (§ 149, Title 14, CCR). Market Squid Transferable Vessel Permits are transferable to vessels of comparable capacity (within 10%). These permits can also transfer to a vessel of larger capacity under a “two for one” permit retirement. Market Squid Brail Permits are transferable based on comparable capacity (within 10%). Transferable Market Squid Light Boat Permits are transferable, and permit holders can upgrade to a transferable Market Squid Brail Permit on a “one for one” permit retirement.

Capacity Goal~~Non Transferable Permits:~~

- ~~• Market Squid Vessel Permit: possession of a current market squid vessel permit (2004–2005), possessed a California commercial fishing license for at least 20 years and made a minimum of 33 squid landings at any time prior to August 27, 2004;~~
- ~~• Brail Permit: Possession of a current market squid vessel permit (2004–2005), possessed a California commercial fishing license for at least 20 years and made a minimum of 10 landings with brail gear during one fishing season in a window period from 1 January 2000 through 31 March 2003. Only receipts that demonstrate catch aboard a vessel that does not already qualify for issuance of a transferable permit of any permit class are eligible.~~

3.2.9. The adopted option (Option I.1) for initial issuance establishes a fleet, (Table 3-3), that is in proximity with

As directed under the adopted capacity goal for the market squid fishery (Option H.3). Further, the adopted transferability options (Options K.3, L.3, and M.4) provide a mechanism to achieve the adopted capacity goal.

~~Table 3-3. Summary of adopted project initial issuance limited entry criteria. Source: CDFG–Landing Receipts~~

Permit Type	Initial issuance criteria	Anticipated number of qualifiers
Market squid vessel permit (transferable)	Possession of a valid 2004–2005 market squid permit; 50 market squid landings between 1 January 2000, and 31 March 2003.	68
Market squid brail permit (transferable)	Possession of a valid 2004–2005 market squid vessel permit; a minimum of 10 landings made with brail gear in window period 1 January 2000 and 31 March 2003.	5 (11 qualify less 6 that also qualify for vessel permit)

Table 3-3. Summary of adopted project initial issuance limited entry criteria. Source: CDFG–Landing Receipts		
Permit Type	Initial issuance criteria	Anticipated number of qualifiers
Market squid light boat owner's permit (transferable)	Possession of a 2004–2005 market squid permit (either vessel or light); submission of one light boat log by 31–December 2000.	45– {57 qualify less 8 that qualify for a vessel permit and 11 that qualify for a–brail permit}
Market squid vessel permit (non transferable)	A 20–year CA commercial fisherman possessing a valid 2004–2005 market–squid permit; a minimum of 33 landings prior to 27 August 2004.	12–25
Market squid brail permit (non transferable)	Possession of a 2004–2005 market squid–vessel permit; possession of a California commercial fishing license for at least 20 years; made a minimum of 10–landings with brail gear during one–fishing season in a window period from 1–January 2000 and 31–March 2003. Only receipts that demonstrate catch–aboard a vessel that does not already–qualify for issuance of a transferable–permit of any permit class are eligible.	5

3.3.4 Permit Fees

The adopted project requires that an appropriate annual fee for market–squid vessel, market squid brail, and light boat owner's permits be established to: 1) cover the cost of squid research and management programs, and 2)–provide adequate monitoring and implementation of aMSFMP limited entry program. Revenue is also generated from taxes levied on squid landings–(\$3.80 per ton) this source of funding is variable and dependent entirely on–the success of the fishery year-to-year. , the Any permit fee established–needs to be reevaluated periodically.

The Commission adopted the following annual permit fees:

——a vessel-based capacity goal of 55 Market Squid Vessel Permit—Transferable—\$2,000

——Market Squid Vessel Permit—Non Transferable—\$1,000

~~Market Squid Brail Permit – Transferable = \$2,000~~

~~Market Squid Brail Permit – Non-Transferable = \$1,000~~

~~Permits, 34 Market Squid Light Boat Permit – Transferable = \$600 Permits, and 18 Market Squid Brail Permits, with the intent for non-transferable permits to decline through attrition.~~

~~Limited entry guidelines require an appropriate fee to implement a limited entry program, while also providing funds for management and research. The current baseline costs for maintaining existing Department programs that deal directly with market squid research, monitoring, enforcement, and license sales exceeds \$964,000 annually (see Section 1, Chapter 5). Under the Commission's adopted program for initial issue of permits, the number of permits issued would be 111 transferable (68 vessel, 13 brail, 38 light boat). Assuming a minimum of 17 20-year nontransferable permits issued, there would be 135 permits initially issued (Table 3-4).~~

The Commission ~~has~~initially adopted the following transfer criteria:

- Establish full transferability of ~~market squid vessel permits~~Market Squid Vessel Permits based on comparable capacity (within 10%).
- Establish transferability of ~~market squid vessel permits~~Market Squid Vessel Permits to a vessel of larger capacity (greater than 10%) under a "2 for 1" permit retirement – this option will allow vessel owners to increase their vessel capacity by transferring their permit to a replacement boat and surrendering one additional permit. Permit holders wishing to increase their current capacity by more than 10% must acquire another ~~market squid vessel permit~~Market Squid Vessel Permit and surrender it to the Department for retirement.
- Once the ~~Capacity Goal~~capacity goal has been achieved, individuals wishing to gain entry into the fishery must secure two permits: one permit must be surrendered to the Department for retirement and one permit would be issued to a vessel of comparable capacity. ~~Market squid light boat owner permits~~Squid Light Boat Permits cannot be used to secure a ~~market squid vessel permit.~~ Market Squid Vessel Permit.

Table 3-4. Range of fees for transferable and non-transferable market squid vessel, brail and light boat owner permits. The current baseline costs for maintaining existing Department programs that deal directly with market squid research, monitoring, enforcement, and license sales exceeds \$964,000 annually (see MSFMP Section 1, Chapter 5).			
Permit type	Initial issuance	Permit Fee	Total
Market squid transferable permits			
Vessel	68	\$2,000	\$136,000
Brail	5	\$2,000	\$10,000
Light	45	\$600	\$27,000
Market squid non-transferable permits			
Vessel	12-25	\$1,000	\$12,000-25,000
Brail	5	\$1,000	\$5,000
Totals	135		\$178,000-
Program fees offset by fees- (%):		Full Implementation (\$964,000)	18.5%
		Current Monitoring Only (\$533,000)	33.4%

For ~~market squid vessel permits~~Market Squid Vessel Permits, the adopted project establishes transferability of these permits to a vessel of comparable

capacity, within 10%. This gives the permit holder some flexibility when another vessel is required, because it is often difficult to find exact matches in capacity and provides fishermen who wish to retire the opportunity to sell their boat and/or permit to new participants. Additionally, the adopted project allows upgrades via transfer to vessels of larger capacity under specified conditions. Using a “2 for 1” permit retirement system, those in the fleet wishing to increase their catching capacity may do so while simultaneously generating a net loss in overall capacity of the fleet, which will aid in achieving the capacity goal.

~~3.3.6. Transferability of For Market Squid Brail Permits-~~

~~For market squid brail permits~~, the Commission adopted full transferability of these permits (See 2005 MSFMP, Option L.3) based on comparable capacity (within 10%). ~~- Given they are a minor component of the fleet and the number of currently active brail vessels is less than the suggested capacity goal, there is little concern regarding overcapitalization at this time.~~

~~3.3.7 Transferability of Market Squid Light Boat Owner's Permits-~~

The Commission ~~has also~~ decided to establish full transferability of ~~light boat owner's permits. Market Squid Light Boat Permits.~~ This ~~would be~~ allowed only if the initial number of permits issued is equal to or less than the capacity goal.

On 22 March 2005, the Commission sent notice of a change in the original proposed language for upgrading a ~~light boat owner's permit~~Market Squid Light Boat Permit to a transferable brail permit. The original language stated that a light boat permit holder may exchange 2 light boat owner permits for one ~~market squid brail permit. Market Squid Brail Permit.~~ The change reflects the ~~Fish and Game~~ Commission's decision to allow the holder of a ~~Transferable~~transferable Market Squid Light Boat Permit to upgrade that ~~Permit~~permit to a Transferable Market Squid Brail Permit, without the surrender of any additional permits (one-for-one upgrade).

~~3.2.8.3.2.10. 3.3.8 Permit Transfer Fees-~~

~~The Commission chose to set the permit transfer fee at \$500.~~ The adopted project ~~establishes~~required that an appropriate annual fee to transfer for market squid vessel, market squid brail, and Market Squid Light Boat Permits be established to: 1) cover the cost of squid research and management programs; and 2) provide adequate monitoring and implementation of a limited entry program (Table 3-2). Revenue is also generated from fees levied on squid landings (\$3.80 per ton) this source of funding is variable and

dependent entirely on the success of the fishery year-to-year. Any permit fee established needs to be reevaluated periodically.

~~light boat owner's~~Table 3-2. Annual permits fees and transfer fees as of April 2024 (Reproduced from California Commercial Fishing Regulations Digest, CDFW 2024b).

Permit Type	Fee
Market Squid Vessel (Transferable)	\$3,636.00
Market Squid Vessel (Non-Transferable)	\$1,822.25
Market Squid Brail (Transferable)	\$3,636.00
Market Squid Light Boat (Transferable)	\$1,096.00
Market Squid Light Boat (Non-Transferable)	\$72.36
Market Squid Transfer Fee	\$500.00
Market Squid Brail (Upgrade from light boat)	\$1,500.00

Initial annual permit fees and transfer fees established by the MSFMP in March 2005 (CDFG 2005) were: Market Squid Vessel Permit – Transferable = \$2,000 Market Squid Vessel Permit – Non-Transferable = \$1,000 Market Squid Brail Permit – Transferable = \$2,000 Market Squid Brail Permit – Non-Transferable = \$1,000 Market Squid Light Boat Permit - Transferable = \$600

3.2.10.1. Permit Transfer Fees

The Commission chose to set the permit transfer fee at \$500. The adopted project established an appropriate fee to transfer market squid vessel, market squid brail, and Market Squid Light Boat Permits to assist with transfer administrative costs. The permit upgrade fee from a transferable light boat permit to a transferable brail permit, with the surrender of the light boat permit, is \$1500.

~~3.2.9~~3.2.11. ~~3.3.9~~ **Experimental Market Squid Vessel Permits**

~~The~~In 2005, the Commission ~~has~~ established 3 experimental market squid vessel non-transferable permits. ~~This allows, which allowed~~ the Commission to issue 3 non-transferable ~~market squid vessel permits~~Market Squid Vessel Permits to any individual for placement on any vessel for purposes of developing a squid fishery in areas previously not utilized for squid production. Individuals issued permits pursuant to this section ~~would be~~were required to adhere to all commercial squid fishing regulations in CCR Title 14 §149, and all terms and conditions for permits defined in CCR Title 14 §149.1, excepting initial issuance criteria defined in CCR Title 14 §149.1(c). These permits ~~count towards~~counted toward the capacity goal. In 2021, CCR Title 14 §149.3 was repealed. in conjunction with of a newly created program for experimental fishing permits (EFP).

3.4 Individuals interested in pursuing small-scale opportunities should utilize the EFP program that was established in 2022. The Department will work with potential EFP applicants to develop EFPs that would allow for limited small-scale fishery opportunities outside the primary commercial fishing areas and not to compete with the existing limited entry program, and to allow for testing for the viability and enforceability of small-scale commercial fishing.

3.3. Ecological Considerations

As part of the 1997 Legislation enacted to protect the market squid resource, the Department was directed to determine where there are areas, if any, that should be declared harvest replenishment areas for market squid where the taking of squid would not be permitted. Harvest replenishment areas for market squid would serve to:

- protect spawning habitat,
- function as forage reserves,
- offer protection against bycatch and fishery interactions, and
- provide areas of uninterrupted spawning for market squid.

In October 2002, the Commission designated 12 new MPAs at the northern Channel Islands (three of which replace existing reserves at Anacapa, Santa Barbara and San Miguel islands). These areas include known commercial squid fishing sites at Santa Barbara, Anacapa, Santa Cruz, and Santa Rosa islands. In addition to the closures at the Northern Channel Islands, commercial fishermen are not allowed to fish in state-designated ecological reserves using roundhaul nets. Several existing reserves are known to be market squid spawning sites (e.g., Carmel Bay Ecological Reserve, Point Lobos Ecological Reserve, northeast side of Santa Catalina Island and Santa Monica Bay); all serve as harvest replenishment areas for market squid. Also, based on the large geographic range (Baja California north to Alaska) of market squid, there is an abundance of areas where squid are not fished. The MPAs and ecological reserves meet all of the goals of a harvest replenishment area. Marine protected areas have multiple uses, including 1) providing a buffer for species against the effects of environmental fluctuations and management uncertainties, 2) protecting specific areas or species from overexploitation, or 3) reducing user conflict.

The market squid resource is also important to the recreational fishery. Further, market squid is a significant component in the diets of numerous seabirds, marine mammals, and fish. The MPAs and ecological reserves will function as forage reserves for the many species that consume market squid.

Several seabird species are the focus of squid fishery interactions with

seabirds, including: the federally and State-listed endangered and fully protected California brown pelican (*Pelecanus occidentalis-californicus*), State-listed threatened *Xantus's* *Guadalupe* murrelet (*Synthliboramphus hypoleucus*) and *Scripps's* murrelet (*Synthliboramphus scrippsi*), and Department species of special concern (SSC) ashy storm-petrel (*Oceanodroma homochroa*).

In total, there are 1415 seabird species that breed on Santa Barbara, Anacapa and San Miguel islands (including one two endangered species, one threatened species and five SSC) while 12 seabird species breed at the Farallon Islands (including four SSC) (Table 3-~~5~~, 3 and 3-4). In addition to these nesting species, there are numerous other species associated with State waters that forage near these islands.

Table 3-3 Diurnal seabird species that breed (indicated by an X) in the Channel Islands and the Farallon Islands. ANA= Anacapa, SBI= Santa Barbara, SMI= San Miguel, SRI= Santa Rosa, SCR= Santa Cruz, CAT= Santa Catalina, SCL= San Clemente, SNI= San Nicolas. R= Roost site.

Table 3-5 Seabird species that breed (indicated by an X) in the Channel Islands and the Farallon Islands.									
Diurnal Species	ANA	SBI	SMI	SRI	SCR	CAT	SCL	SNI	Farallon Is.
Diurnal Species									
California Brown Pelican*	X	X	R	--	R	--	R	R	--
Double-Crested Cormorant**	X	X	X	--	--	--	--	X	X
Brandt's Cormorant	X	X	X	X	X	--	X	X	X
Pelagic Cormorant	X	X	X	X	X	--	--	--	X
Western Gull	X	X	X	X	X	X	X	X	X
Pigeon Guillemot	X	X	X	X	X	--	--	--	X
Tufted Puffin**	--	--	X	--	--	--	--	--	X
Western Snowy Plover †, **, **	--	--	x	X	--	--	--	--	--
Black Oystercatcher	X	X	X	X	X	--	X	X	X
Common Murre	--	--	--	--	--	--	--	--	X
Nocturnal Species									
Ashy Storm-Petrel**	P	X	X		X	X	X		X
Black Storm-Petrel**		X	X			X	X		
Leach's Storm-Petrel		X	X						X
Xantus's Murrelet† **, ***	X	X	X		X	X	X		
Rhinoceros Auklet**			X						X

Cassin's Auklet†	X	X	X		X				X
------------------	---	---	---	--	---	--	--	--	---

*Federally and State listed as endangered

~~† Federally listed as threatened~~, ** Department Species of Special Concern (SSC), ~~— x = not seen since 1991~~

~~‡ Federally listed as threatened*** State listed as threatened~~

P= probable nesting, R= Roost site

Table 3-4 Nocturnal seabird species that breed (indicated by an X) in the Channel Islands and the Farallon Islands. ANA= Anacapa, SBI= Santa Barbara, SMI= San Miguel, SRI= Santa Rosa, SCR= Santa Cruz, CAT= Santa Catalina, SCL= San Clemente, SNI= San Nicolas. P= probable nesting.

3.4.1 Area and Time Closures to Address Seabird Issues

Nocturnal Species	ANA	SBI	SMI	SRI	SCR	CAT	SCL	SNI	Farallon Is.
Ashy Storm-Petrel**	P	X	X	--	X	X	X	--	X
Black Storm-Petrel**	--	X	X	--	--	X	X	--	--
Leach's Storm-Petrel	--	X	X	--	--	--	--	--	X
Guadalupe Murrelet**, ***	--	X	--	--	--	--	X	--	--
Scripp's murrelet	X	X	X	--	X	X	X	--	--
Rhinoceros Auklet**	--	--	X	--	--	--	--	--	X
Cassin's Auklet	X	X	X	--	X	--	--	--	X

** Department Species of Special Concern

*** State listed as threatened

3.3.1. Area and Time Closures to Address Seabird Issues

The Commission established an area closure to squid fishing with the use of attracting lights in the Gulf of the Greater Farallones National Marine Sanctuary with boundaries defined as of 27 August 2004. This would protect not only the seabirds that breed and rear on the Farallon Islands, but also protect a large forage area (3,250 km²) in the waters surrounding the islands from light disturbance and interactions with squid vessels.

Under this option, noise associated with squid fishing activities has the potential to cause disturbances to seabirds.

3.5 The Department, with support from the SFAC, has developed a draft Fishery

"Best Practices" document to be distributed to all commercial squid fishery participants. The Department will continue to collaborate with researchers to evaluate potential wildlife interactions (primarily nocturnal seabirds at the Channel Islands National Park) using squid fishery log data. The Best Practices document includes precautionary conservation measures that squid fishing vessels should implement near shorelines and in sensitive bird nesting regions. Evaluations of interactions will use long-term monitoring to inform potential wildlife interactions.

3.4. Administrative Items

3.4.1. ~~3.5.1~~ Advisory Committee for Squid Fishery

The Commission in its adoption of §53.02 to Title 14, CCR established that the Director may create an advisory committee to assist the Department with development and review of fishery assessments, management options and proposals, and Plan amendments. This squid fishery advisory committee shall be comprised of industry, science, and environmental community members. The committee will assist the Department by providing recommendations regarding the effectiveness of adopted squid management.

Chapter 4. ~~Chapter 4.~~ **Research to Support the Market Squid Fishery Management Plan**

At the core of the ~~Marine Life Management Act (MLMA)~~ is the principle of basing decisions on best available scientific information as well as other information that the Department and Commission possess [FGC §7050(b)(6)]. ~~With this in mind, the~~The MLMA includes, as a broad objective, promotion of marine ecosystem research that will enable better management decisions [FGC §7050(b)(5)]. Within ~~this~~the general policy on science and living marine resources, the MLMA establishes specific policies for the management of marine fisheries. Generally, fishery management decisions are to be based on best available scientific or other relevant information readily available, including what the MLMA calls ~~Essential Fishery Information (EFI)~~.EFI.

The MLMA defines EFI, with regard to a marine fishery, as information about fish life history and habitat requirements, the status and trends of fish populations, fishing effort, and catch levels, fishery effects on fish age structure and on other living marine resources and users. The MLMA calls upon the Department to collect EFI for all marine fisheries managed by the State in cooperation with participants in the fishery [FGC §7060(a)(b)]. To foster improvements in the management of individual fisheries, the MLMA requires that fishery management plans include research protocols that identify critical information gaps and the steps that will be taken to close gaps [FGC §7081].~~These protocols~~

Protocols are to describe the following:

- Past and current monitoring of the fishery;
- EFI, such as age structure of a population and spawning season, and other relevant information; and
- Plans for additional monitoring and research needed to acquire EFI.

~~In these ways, the~~The MLMA provides an opportunity for fishermen, scientists, fishery managers, conservationists, and others to develop a system for obtaining the information needed to manage our living marine resources.

Although much biological information has been gathered on market squid in the past ~~3050~~ years, EFI is lacking in many areas for ~~this~~the species. Future research should be directed toward acquiring EFI and involving collaborative efforts of the fishing industry (both commercial and recreational) and qualified university or private fisheries research institutions. In accordance with MLMA, ~~this~~ chapter 4 describes fishery research protocols designed to advance the MSFMP. Additionally, ~~#chapter 4~~ identifies gaps in the current

knowledge of market squid stocks and the fishery, and the steps needed to obtain this information for implementation to be successful. This chapter describes a research plan that is designed to incorporate the goals of the MLMA with the objectives for the management of the California market squid fishery.

4.1 Grouping Essential Fishery Information

Besides requiring a description of current and past monitoring of the fishery, the MLMA also requires that research protocols in FMPs include a description of EFI for the fishery. All EFI categories are important or essential; however, resources required to obtain this information will always be finite. Essential fishery information has been categorized below to identify areas that are necessary to management. It is important to emphasize that these groups are not mutually exclusive since one group may include components that fall under another.

4.1.1 Age and Growth Characteristics

Age and growth studies typically measure how long a species lives, the age at which it reproduces, and how fast individuals grow. This information is very important to determine a population's ability to replenish itself, at what rate it might be harvested, and when individuals will reach a harvestable size. Changes in the age structure and growth rate of a population also serve as indicators of the population's health. This information is often essential for stock assessments and models that guide management strategies. Specific EFI includes length/weight ratios, longevity, age/length ratios, age at size at sexual maturity, and age at length at recruitment into the fishery.

4.1.2 Distribution of Stocks

A stock is a population unit that is selected for management purposes. It may be defined based on its ecology, genetics, and/or geographic separation. Discrete stocks of a given species may have very different growth rates, reproductive schedules and capacity, and ecological relationships. Stock distribution refers to where a stock is found and is important in addressing jurisdictional issues. Specific EFI includes the depth and geographic range of a species, the amount of gene flow and genetic structure of the stock, and helps to determine whether stocks are separate or continuous.

4.1.3 Ecological Interactions

This information identifies the interaction of fishes within the environment, habitat, and ecological community. The MLMA recognizes that fisheries are part of a larger system

and calls for conserving the health and diversity of marine ecosystems and living marine resources (FGC §7050)]. Fisheries are embedded in a web of ecological relationships that include the effects of oceanographic regimes and human disturbances on physiological, energetic, or behavioral aspects of organisms, relationships with prey and predators, interrelationships among species due to relative density of different populations, and the distribution and quality of habitat that is key to reproduction and recruitment. Estimation of any ecological relationship demands a species-specific, within-habitat approach due to environment and organism cross-correlations.

4.1.4 Estimates of Abundance

This information helps to determine how many individuals comprise the population and the number available to the fishery. This information is essential for all predictive modeling of marine resources. Estimates of stock size can be determined through direct (e.g., surveys) or indirect (e.g., examination of the exploitation history) means. Specific EFI includes relative densities of target species, habitat-specific absolute densities, length frequency distributions, relative density estimates of life stages (i.e., eggs, larvae, young of the year, juveniles, or adults), recapture rates of tagged fish, and catch per unit effort information.

4.1.5 Movement Patterns

This information identifies the spatial distribution of fish and their residence time in specific habitats. Many species may exhibit movement patterns that are associated with specific oceanographic conditions. Certain species may aggregate in specific areas for spawning, move in predictable patterns, or move to certain locales that make them especially vulnerable to harvest. Insights into the movement patterns of fish are important to the development of management strategies based on regional catch quotas or marine protected areas. Specific EFI includes the home range, homing ability, seasonal migrations, environmental cues, and spawning grounds of a species.

4.1.6 Recruitment

Recruitment refers to the number of a species that survive to a particular life stage. It is often used to predict the population size in the future. In this context, recruitment refers to both recruitment to the fishery and recruitment to the population. Many species depend on successful recruitment events for replenishment of the stock. Recruitment success can be highly variable because it depends on the proper combination of many factors. As a result, sustainable harvest of the fishery may depend on only a few strong cohorts (born the same year) to provide harvestable stocks until the next successful recruitment event. Resource managers must consider this variable recruitment success when setting harvest levels by allowing sufficient portions of stocks to “escape” harvest and providing spawning biomass for future

~~recruitment successes. Specific EFI includes the duration and distribution of eggs and larvae, size and timing of recruitment events, and annual cohort success. In addition, information on habitat availability and levels of predators and prey items is also important.~~

~~4.1.7 Reproductive Characteristics~~

~~Understanding key reproductive characteristics allows managers to set appropriate open and closed seasons and protect valuable spawning habitats.~~

~~Specific EFI for a species includes the number of eggs released, size at maturity, fertilization and spawning period, geographic spawning area, multiple spawning periods, and the nature of mating systems. These data describe the reproductive potential of a fish stock and its ability to replenish itself.~~

~~-~~

~~4.1.8 Total Mortality~~

~~Total mortality of market squid refers to all removals of squid from the biomass and is traditionally separated into natural as well as fishing mortality. Natural and fishing mortality rates comprise the sum of all individuals removed from a population over a fixed time. Fishing mortality is the number of animals that are removed from the population by fishing. Natural mortality refers to all other forms of removal of squid from the population such as predation, starvation, disease or age. Fishing mortality and natural mortality are estimated in setting the current threshold of egg escapement. Mortality figures are essential for stock assessments and models to determine the number or weight (biomass) that may be safely harvested from a population or stock. Specific EFI includes catch data location, amount and sizes of discarded catch, landings by gear type, and survivability of fish that are released.~~

~~4.1.9 Market Squid Fishery Social and Economic Factors~~

~~The economic stability of coastal communities and quality of life may be affected by changes in activities related to recreational fishing or commercial fishing and processing. These changes may be caused by indirect factors or regulatory changes that directly affect fishing activities. Indirect factors include triggers from consumer or financial markets, such as 1) changes in consumer demand due to the favorable pricing and supply of a substitute item for a fishery product(s), 2) inflation, and, 3) tax changes that affect business investments or activities. These effects may be manifested locally through resultant changes in business output, employment, population, and public service demand. Four factors regarding social and economic information for the market squid fishery (employment, expenditures, market demand and revenue) are discussed below.~~

4.1.9.1 Employment

Overall, impacts to local community earnings and employment can be gauged using input-output multipliers to project the changes to local personal income and the number of local jobs. This procedure takes the direct change in final demand for an industry product or service in revenue or sales dollars and multiplies this direct change by a total income coefficient to estimate total change in local personal income. Similarly, multiplying the direct change by an employment coefficient will yield an estimate of changes in the number of local jobs.

4.1.9.2 Expenditures

Regulatory changes that directly affect recreational or commercial fishing revenues in local economies have a downstream effect on other economic sectors, which receive and re-spend those revenues. Output multipliers are used to describe the turnover effect (number of times a dollar is exchanged within a community) and interrelationships between the basic sector and downstream business sectors in the local economy.

Additionally, changes that directly affect end-user demand for recreational fishing activities or commercial fisheries products may change end-user spending patterns. Depending on the nature of end-user demand for a given service or product, end-users may spend less if the quantity or quality of the service or product is decreased. Conversely, we would expect end-users to spend more if the quantity or quality was improved. These changes in spending patterns may also affect purchases of related or ancillary goods or services provided in the local economy.

Lastly, the costs (usually expenditures) of production of a good, a service, or an activity provide a means to compare the relationship between resources used to benefits derived. Often, this is expressed as the benefits to cost comparison. In the case of commercial fishing activities, by monitoring costs of production at various levels of output, we can define production where we have maximum economic benefit (or “profits”). This is important in creating harvest guidelines which foster optimum economic yield and economic efficiency in the fishing fleet. Economic efficiency equates to cost and waste minimizing practices.

4.1.9.3 Market Demand

Changes in the quantity or quality of available fishery related goods or services affect the individual end-user's demand for those goods or services. How much this demand may be affected depends on individual income, tastes, preferences, and the accessibility to substitute goods or services. The aggregate demand, based on the combined responses of individuals to changes in a good or service, yields an overall demand function for a good or service. This demand function is used to predict the reactions of end-users to changes in the quantity or quality of goods or services, and

~~to estimate the relative value and benefits end users derive from a good. Consequently, the effects of in-season adjustments to harvest limits can be projected in terms of the anticipated response of the target group of end users, as well as changes in the corresponding revenue streams.~~

4.1.9.4 Revenue

~~This category includes revenue from the sale of local goods or services within the community and those goods or services which are exported out of the community. Revenue information allows resource managers to assess how changes in resources or regulations may affect industry sector revenues and ultimately, the local community's economic output and vitality. Revenue generated by fishery-dependent activities (e.g., by commercial landings, recreational direct expenditures, or end-user consumption of commercial products) provides basic information for calculating contributions to local economies and a means to compare relative values of goods and services derived from the fishery.~~

4.1. ~~4.2~~ Past and Ongoing Monitoring of the Commercial Fishery

4.1.1. ~~4.2.1~~ Sustainable Fishery Control Rules

Fishery Monitoring total market squid landings is necessary to ensure established limits are maintained. Fishery control rules determine levels for take and upper limits on take. Information on biomass, reproductive potential and productivity, and age composition, as well as other biological, social, and economic parameters, is necessary to directly and accurately calculate allowable fishing mortality. In some areas, market squid are in a data-rich situation while other areas are data-poor. The result is that some basic EFI is not generally available. ~~These gaps need to be a priority in research.~~

Although the PFMC adopted the egg escapement method to monitor the market squid fishery setting the egg escapement threshold level at 30%, there are several areas that require further research or refinement including:

- Verify that the current threshold level of egg escapement promotes sustainability of the fishery;
- Information is needed regarding duration of spawning, egg-laying rate, rate of maturation and natural mortality on spawning grounds;
- Fishery-dependent sources of mortality of eggs spawned such as destruction of impacts to egg beds by fishing gear should be investigated as they are not quantified in the egg escapement threshold; ~~and~~

- Test and explore the potential use of EDM for management procedures and further evaluation under climate change
- Egg escapement methodologies need spatial and temporal evaluation of northern and southern fisheries.

4.1.2.4.2.2 Fishery-Dependent Monitoring

4.1.2.1. 4.2.2.1 Past Fishery-Dependent Monitoring

~~Fishery Landing receipts were the earliest form of fishery-dependent data for collected from the commercial market squid fishery have been collected since 1927. Commercial data in the form of landing receipts, which are filled out when the catch is sold to fish businesses or by fishermen selling directly to the public, are the primary source of information on the . The Department began collecting receipts in 1927 for all commercial fisheries to provide general knowledge of fishing activity, specifically in terms of amount landed, landing location, geargears used, and value of the catch. - Landing receipts to date have provided a general knowledge of when and where fishing activity occurs and amount of squid landed. Logbooks are another useful tool for tracking fishing activity that supplements data gathered from landing receipts. In the case of market squid, logbook information is gathered from fishing vessels and light boats. These records provide a measure of fishing effort and may prove helpful for population modeling.~~

~~Additionally, the Department has actively collected fishery-dependent biological data on market squid through a dockside sampling program since October 1998. The typical data collected are species identification, size, weight, sex, age from statoliths, maturity through gonad and mantle tissue collection, and fecundity.~~

4.2.2.2 Problems with Past and Ongoing Fishery-Dependent Monitoring

~~Currently, some fishery-dependent data are of limited use. Fishery-dependent monitoring, using landing receipts, does not provide adequate information about fishing location. Fishing blocks used by the The Department are 10 nautical miles (nm) by 10 nm representing an area of 100 square nautical miles. The size of the blocks is too large to identify specific fishing locations. Logbooks, which have been in operation since May 2000, will provide a more spatially explicit understanding of fishing activity, which is important for proper fishery management.~~

~~Generally, finfish stock fishery-dependent data have performed poorly in predicting stock decline when used alone (National Research Council 2001). However, because squid are pelagic and fishery-independent data are limited, the use of fishery-dependent data are the only source of stock information. Further, squid are short lived (six-nine months) invertebrates, rather than longer lived finfish, therefore, using fishery-dependent data presents additional challenges to an already problematic method of predicting abundance.~~

~~4.2.3 actively Fishery-Independent Research~~

~~4.2. 4.2.3.1 Past Fishery-Independent Research~~

~~There have been few fishery-independent studies on market squid. The Department sponsored several research projects beginning in 1998. These studies have provided necessary information on paralarval and market squid distribution when not on the spawning grounds, characterization of spawning habitat, and reproductive potential.~~

~~Fishery-independent data can: 1) provide measures of the relative abundance, trends, and estimates of the size and age structure of fish stocks which are not affected by fishing practices or management regulations; 2) calibrate trends in fishery-dependent estimates and tune assessment models; and 3) encompass a broad suite of information on the biological community, the physical environment and the ecosystem as a whole, which cannot be obtained directly via fishery-dependent measures.~~

~~4.2.3.2 Problems with Past and Ongoing Fishery-Independent Research~~

~~Fishery-independent research has, and continues to be, conducted by a few organizations through a diverse set of funding sources. Unfortunately, the bulk of the research suffers from:~~

- ~~• Limited spatial coverage;~~
- ~~• Non-standardized research that prevents comparison with other data sets; and~~
- ~~• High costs.~~

~~However, the Department market squid research program was funded primarily through substantial permit fees and has been coordinated for comparability throughout California. Further, the Department has collaborated with agencies, squid fishermen, and universities to conduct the research. This collaborative research approach is effective and should be advanced. A reduction in permit fees to \$400 by the Legislature in the 2001–2002 season coincided with a reduction in Department-sponsored research.~~

~~4.3 Current Knowledge of Essential Fishery Information~~

~~Currently, EFI for market squid is limited for management purposes. Additional data would be desirable to assess the biomass of the stock, life history, ecological interactions, and socioeconomics. A description of the data currently available on market squid is outlined below.~~

~~4.3.1 Age and Growth Characteristics~~

~~The lifespan of market squid has been calculated based on recent research. Preliminary results indicate that market squid harvested are between four and ten~~

~~months in age with new cohorts entering the fishery at least seven times a year. Length-at-age and length-weight relationships have been calculated, but need to be verified by further age and growth studies. In addition, daily ring deposition on statoliths needs to be validated throughout the lifespan of market squid.~~

~~4.3.2 Distribution of Stocks~~

~~The distribution of the market squid population is from the southern tip of Baja California, Mexico to southeastern Alaska. It is not known whether the population is made up of one or more stocks.~~

~~4.3.3 Ecological Interactions~~

~~No statewide coordination exists for studies of ecological interactions of market squid. Consequently, little is known about the region-specific effects of oceanographic regimes and human effects on the physiological, energetic, and behavioral characteristics of market squid, or the species that they interact with as prey, predators, or competitors.~~

~~4.3.4 Estimates of Abundance~~

~~No defensible estimates of abundance exist for market squid.~~

~~4.3.5 Movement Patterns~~

~~Paralarval research (Zeidberg and Hamner 2002) provides preliminary information of movement of paralarval squid, including movement offshore within currents and vertical migration.~~

~~4.3.6 Recruitment~~

~~Paralarval studies (Zeidberg and Hamner 2002) may provide information to predict recruitment into the fishery and identify spawning areas not targeted by the fishery.~~

~~4.3.7 Reproductive Characteristics~~

~~Some reproductive characteristics of market squid have been identified (Macewicz et al. 2001b). The potential fecundity has been characterized and is utilized in the egg escapement method. While monitoring continues, preliminary data indicate that the rate of eggs spawned prior to harvest varies between seasons. The temperature range for spawning squid has been identified using a remotely operated vehicle (ROV) and is most often in the range of 50 to 57° F. These current fishery independent data collection methods need to be continued.~~

~~4.3.8 Total Mortality~~

The current rate of natural and fishing mortality for market squid, on either a daily or a monthly basis, is largely unknown. Ageing studies have started to produce better estimates and need to be continued on spatial (throughout its range) and temporal (within and between seasonal) scales.

4.3.9 Social and Economic

Adequate information on employment, expenditures, and revenues for certain basic sector industries are readily available or can be derived from existing sources. Such sources include the periodic surveys and reports prepared by the Bureau of the Census, the Bureau of Labor and Statistics, the Bureau of Economic Analyses, the USFWS, the Department, and local institutions and academic affiliates. Combined information from these sources allows analyses of impacts or contributions to local economies by commercial fishing activities. However, these sources do not provide adequate information relevant for a thorough analysis of the California market squid fishery.

4.4 Research to Obtain Essential Fishery Information

The Department is currently monitoring the market squid fishery through fishery-dependent programs and fishery independent research. The fishery dependent port sampling program allows the Department to determine the characteristics of harvested squid and shifts in the fishery, as well as estimate egg escapement. Another fishery-dependent program is the logbook program, which allows an estimate of fishery effort and provides exact locations of fishing activity. The egg escapement method is based on female squid collected independent of the fishery. Current fishery independent research is focused on increasing the sample size of female squid to refine the egg escapement model as well as the characterization and location of squid spawning beds.

The following research needs are necessary to fill market squid EFI gaps identified above. The overall goal is to expand our knowledge of market squid. Data poor management using a MSY proxy should be considered a temporary solution while an accurate method to assess market squid biomass is pursued.

4.4.1 Fishery Dependent Data Research

Current efforts to collect fishery dependent data rely heavily on port sampling, landing receipts, and logbook data. Landing receipts and logbooks record fishing effort and allow managers to track fishing trends. Port samples provide valuable environmental and biological information on squid taken in the fishery. When using the egg escapement method (as a proxy for MSY), it is important to be aware of shifts in the fishery that may make this method less effective. These data can be used to detect changes in the fishery including potential shifts (such as a shift to pre-spawning adults), which may have detrimental effects on the population.

4.4.2 Fishery Independent Data Research

The most important fishery-independent research need is to develop a model to estimate market squid biomass. Since direct population counts cannot be made, it is necessary to develop models or proxies to estimate population parameters (e.g., mortality, fishing pressure).

Currently, market squid fecundity estimates, based on the egg escapement model, are used as a proxy for MSY. However, it is important to improve and enhance these estimates by increasing the sample size of female market squid used in the histological studies upon which the egg escapement model is based. In addition, mantle condition, especially the rate of mantle thinning, will provide insight into the health of squid caught in the fishery. Further, it is necessary to obtain a more complete understanding of squid spawning including the number of times spawning occurs in a lifetime, spawning rate, and the duration of time spent on spawning grounds.

Like other cephalopod species, the age of market squid can be determined by counting growth rings on the statoliths; however, this technique needs to be verified and validated for all stages of market squid development. In addition, current research is aimed at identifying possible differences of growth and/or fecundity rates between squid caught in the northern and southern California fisheries.

A common problem in most fisheries is bycatch. The potential take of both commercially and recreationally important fish species, such as salmon, should be further evaluated. The current port sampling program only monitors the frequency of incidental catch observed at the squid processing facilities. The use of at sea observers should be evaluated to determine if bycatch is an important issue to this fishery by documenting any impacts to commercial and recreationally important fish species such as salmon and rockfish, in addition to marine mammals and seabirds. In addition, squid egg cases can be disturbed during fishing operations. Therefore, it is important market squid fishery by collecting dockside port samples and logbook information. The monitoring program began in October 1998, and logbook information became mandatory in 2000. The Commission maintained existing fishery-dependent market squid monitoring programs as one of the MSFMP fishery control rules in 2004. The primary goal of collecting these data is to monitor bycatch to determine how squid eggs are being impacted. ROV and visual surveys may provide information on fishery impact to squid egg cases. These data may be applicable to future changes in the biological characteristics and to characterize California's commercial market squid fishery for development of population models.

Larval squid abundance from California Cooperative Ocean Fisheries Investigations (CalCOFI) cruises from 1978–1998 needs to be analyzed and if possible used as an

~~index of abundance for modeling purposes. Studies on natural mortality rates, dietary requirements, and spawning behavior could also fill in life history gaps. Other identified studies involve examining the distribution and migration of squid, including the determination of squid stock structure using genetic analyses.~~

~~Future research also needs to include explorations of spawning areas other than the traditional locations and an examination of egg densities and egg dynamics. Studies on the effects of sound and light disturbance on seabird populations should be continued. The possible interaction of predators (i.e., sea lions) and squid attracted to night lighting also should be addressed. Furthermore, it is recommended that monies and efforts be invested into archiving data and samples, expanding socioeconomic data collection, and maintaining a database on spawning areas.~~

4.4.3 Sample collection is centered on the major port complexes of landing, which include Monterey (Monterey and Moss Landing), Santa Barbara (Santa Barbara, Ventura, and Port Hueneme), and Los Angeles (San Pedro and Terminal Island). Other ports such as Eureka, Bodega Bay, Half Moon Bay, and San Francisco are included when landings are significant in those areas. Standardized protocols are used to maintain consistent sampling among port complexes. During the offloading process samplers make visual observations of species composition and incidental catch. They also record % composition of CPS (Pacific sardine, Pacific mackerel, jack mackerel, northern anchovy) by volume of the total landing. All other incidental species observed in the landing are noted, with special attention paid to prohibited or protected species (e.g., salmon). The observations are reported in PFMC CPS Stock Assessment and Fishery Evaluation reports.

4.1.2.2. Market Squid Fishery Sponsored Research Logbook Program

Market Squid Vessel and Light/Brail Boat Logbooks (logs) are a mandated system for fishermen to record their fishing activities. These data supplement landing receipts. Logbook data are used to monitor fishing locations, environmental conditions, fishing effort, catch amounts, use of catch, and fleet characterization and capacity. The Department is working with fishery participants to develop an electronic logbook (e-log) for the California market squid commercial fishery. Once developed and tested, the new e-log may replace the current paper logbooks.

4.1.2.3. Additional Sampling Efforts

The Department has assisted with additional market squid sample collections to supplement various independent and collaborative research projects over time. These studies were generally intended to increase understanding of market squid life history (Table 4-1).

Table 4-1. Summary of market squid sample collections for independent and collaborative research projects over time.

<u>Time Period</u>	<u>Principal Investigator</u>	<u>Resulting Publications</u>	<u>Samples Collected</u>	<u>General Purpose</u>
<u>1999 - 2001</u>	<u>John Butler</u>	<u>Butler et al. 2001</u>	<u>Gonad weight, mantle weight, statoliths</u>	<u>To develop the ageing methodology for market squid, to look at fecundity in terms of batch fecundity and age at maturity, and to develop a population model for market squid.</u>
<u>1999 - 2002</u>	<u>William Gilly</u>	<u>Gilly 2003</u>	<u>Gill filaments</u>	<u>To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery, as well as between nearshore and offshore populations in Monterey.</u>
<u>2008 - 2009</u>	<u>Robert Warner</u>	<u>Warner et al. 2009</u>	<u>Egg cases</u>	<u>To identify geographic differences in trace element concentrations in adult natal core and early larval areas of statoliths, ultimately for use in identifying source populations of stocks.</u>
<u>2008 - 2009</u>	<u>Mark Lowry</u>	<u>Not Published</u>	<u>Mantle length</u>	<u>Regression analysis on mantle length to beak size.</u>
<u>2014 - 2015</u>	<u>Samantha Cheng</u>	<u>Cheng et al. 2020</u>	<u>Egg cases</u>	<u>To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery.</u>

Fishery-Independent Research

Collaboration between government researchers and various fishing industries has been promoted in recent years to defray increasing costs of management as well as to increase awareness of the targeted resource. As recognized by the market squid legislation, information on this resource is limited, and the FMP addresses this with a research and monitoring component. As knowledge increases or additional management needs become apparent, the FMP allows for adaptive management to occur. The Department supports and encourages efforts by the squid fishing industry to become involved and address appropriate research questions.

A preliminary meeting in April 2004 between an industry sponsored group of fishermen and processors and Department, NOAA Fisheries and university researchers was held with the goal to identify and prioritize research needs and design a plan for cooperative field research. Some of the proposed projects that industry could participate included:

- Identifying potential spawning areas from anecdotal and existing fishery data;
- Collecting representative samples of the missing age class of virgin female squid;

- ~~Testing the effectiveness of squid light boats at estimating squid abundance using lights for set periods of time (a catch per unit of effort concept); and,~~
- ~~Testing the effectiveness of light boats and fishing vessels to perform bongo net tows which would augment CalCOFI data with nearshore and additional stations between and outside the CalCOFI stations.~~

4.1.3. 4.4.4 Steps to Monitor the Fishery and Obtain

4.1.3.1. Past Fishery-Independent Research

Fishery-independent data on juvenile market squid come from annual Rockfish Recruitment and Ecosystem Assessment reports (e.g., juvenile rockfish surveys). The CPUE of regional forage (northern anchovy, Pacific sardine, krill, market squid, juvenile rockfish, juvenile sanddabs, and juvenile Pacific hake (*Merluccius productus*) in the central CCE (defined as the nearshore region of the eastern Pacific between Crescent City Harbor and Point Conception) is measured annually using NOAA trawl surveys in spring or summer. These data are publicly available at the NOAA California Current Integrated Ecosystem Assessment (CCIEA) website (CCIEA 2023).

In addition, there is a long-standing data series of market squid paralarvae abundance from surveys conducted through collaborative efforts by multiple agencies and the fishing industry. These data, in part, come from California Cooperative Oceanic Fisheries Investigations (CalCOFI), a multi-agency partnership between the Department, NOAA, and Scripps Institution of Oceanography formed in 1949 to study the ecological aspects of the Pacific sardine population. Recent focus has shifted to include the overall study of the marine environment off California, the management of its living resources, and monitoring the indicators of climate change. Quarterly surveys are conducted off southern and central California, collecting hydrographic and biological data on static stations over transect lines. Biological data collection methods include Continuous Underway Fish Egg Sampler, trawling, bongo net tows for displacement volumes of zooplankton and pelagic invertebrate, and fisheries acoustics. A bongo net consists of paired plankton net bags 2.5 m long attached to stainless steel rings 60 cm in diameter. CalCOFI data are accessible to the public through their data server (CalCOFI 2021).

Paralarvae abundance surveys make up the largest fisheries-independent data series for the market squid fishery. Sampling was opportunistic prior to 2010, but since then California Wetfish Producers Association (CWPA) has maintained standardized surveys. CWPA conducts the paralarval surveys at least four times each year in the SCB (following the CalCOFI schedule when possible) and twice a year in the greater Monterey Bay and Half Moon Bay

area; during which they also collect water samples at select sampling stations. Original studies investigated the correlation between paralarvae abundance and CPUE of the fishery (Zeidberg et al. 2006; Koslow and Allen 2011). Zeidberg et al. (2006) used samples collected inshore from independent research cruises from 2000 to 2003. This paralarvae density index correlated with CPUE showing a significant stock recruitment relationship, although collections only spanned four years.

Koslow and Allen (2011) used manta tow samples taken from quarterly CalCOFI surveys from 1981 to 2008, which are located offshore from the Zeidberg et al. (2006) study. These manta tows were conducted 8 cm below the air-sea interface using a neuston net, which has a large, rectangular net frame. Results from the Koslow and Allen (2011) study were less significant; however, the data spanned 20 yr and were only correlated at an annual scale. The CFWA initially implemented bongo tows in 2005. The original intent of this work was to supplement the CalCOFI survey by providing samples nearshore, adjacent to known spawning sites, since CalCOFI sample sites rarely overlap squid paralarvae habitat. The CFWA trained operators to tow bongo nets, but comprehensive sampling was not always logistically possible. Beginning in January 2011, CFWA chartered dedicated fishing vessels for the specific purpose of conducting these small net tows on a systematic schedule. There is a difference, however, in the collection methods between these studies. Koslow and Allen (2011) analyzed CalCOFI manta tow data because squid presence was greater in the surface-oriented manta nets than in the offshore obliquely deployed bongo tows. However, bongo tows are considered more appropriate since they tend to sample 2-week-old squid, which have survived the critical stage of first feeding. Manta tows may sample day old squid. Additionally, the older paralarvae begin to migrate to deeper depths, thereby avoiding mortality from radiation and surface predation.

This paralarvae sampling project aims to better understand the physical and ecological factors that control recruitment to major spawning grounds, and to improve the assessment of market squid stocks off California. The CFWA has also worked with the SWFSC to determine, through stoichiometry, if the chemistry in the water matches or differs from the chemistry of the paralarval and adult statoliths. The Department has collected market squid samples from commercial fishery landings that coincide with these surveys and similar research. Using paralarvae and adult samples, Warner et al. (2009) found geographic differences in trace element concentrations in the statoliths of paralarval market squid. The chemical signatures of adult statoliths closely matched those of paralarvae suggesting that matching fingerprints of ripe eggs and adults six months after could indicate the degree of mixing of market squid populations on ecological timescales.

4.2. Current Knowledge of Essential Fishery Information

Fishery-dependent EFI collected through the Department's Market Squid Monitoring and Sampling Program include:

- Landings and effort – tonnage per day and week, number of vessels, and fishing location/block. The Department monitors tonnage to ensure closure of the fishery before the catch limit of 107,048 mt (118,000 tons) is exceeded.
- Biological – individual weight, length, sex, maturity, dried mantle weight, and gonad weight. Gonad weights are used to provide information for the egg escapement model that is intended for use as F_{MSY} proxy.

4.3. Research to Obtain Essential Fishery Information

~~The Department will need more resources than are currently available in order to begin some of the research needed to address EFI issues. The research objectives should be based on data necessary to model the market squid biomass. The Department is encouraging collaboration with other state and federal agencies, academia, and the user groups to conduct EFI research and address squid management needs. Some of these needs include:~~

- ~~• Further analysis and evaluation of particular components of the egg escapement method for the market squid population off the coast of California. This modeling work should focus on developing a better understanding of squid biology and population-level responses to exploitation strategies;~~
- ~~• Developing an infra-structure to facilitate communication, logistical support, standardization of data collection methods, preliminary analysis, and reporting;~~
- ~~• Addressing the effects of fishing gear (nets, bottom lines and shackles) on squid egg beds;~~
- ~~• Assess relevance of previously collected data, publish for peer review, and use in management decisions;~~
- ~~• Addressing the effects of squid lighting gear on nesting seabird rookeries;~~
- ~~• Assessing the effectiveness of enforcement and adjust as necessary to better manage the resource (i.e., increasing penalties and/or enforcement);~~
- ~~• Obtaining recommendations from advisory committees of the best data collection activities and models for market squid stock assessment; and,~~
- ~~Initiating educational outreach programs.~~

~~4.4.5 Social and Economic Dimensions of the Fishery~~

~~The relationship between fishermen and the markets plays a vital role in the survival and sustainability of a fishery (Pomeroy and FitzSimmons 2001). Many squid fishermen have close social and economic ties to local fishing communities. As a result, the economic stability of coastal communities can be greatly impacted by local fisheries. Therefore, comprehensive analyses of the socioeconomic dimensions of the squid fishery should be considered. Due to the instability of the market squid fishery, the~~

~~socioeconomic components can change frequently; thus, it is important to continually re-examine these conditions.~~

~~These recommendations work toward providing needed EFI and bringing the Department closer to an ecosystem-based approach to the management of market squid.~~

4.3.1. E-Logs

In the effort of modernizing and advancing the market squid logbook, the Department, EDM team, and SFAC described and discussed specific examples of modifications to data fields and the information collected. Electronic data collection in the form of an e-log could generate more timely and reliable information as well as reduce time and effort for vessel operators and Department staff. By minimizing manual entry and written records of detailed information such as GPS coordinates, the validity and accuracy of data collected can improve. An e-log also enables more real-time monitoring, better quality assurance and quality control, and improved compliance.

4.3.2. Empirical Dynamic Modeling

While market squid is currently considered a sustainable fishery, a need exists to modernize management and planning in the context of climate change. In the primary fishing grounds, located in the southern region of California, market squid landings, larval abundance, and size at maturity declined during major El Niño events. Empirical dynamic modeling (EDM) captures nonlinear dynamics and system drivers that haven't been measured by including lags (i.e., previous measurements of the same data stream at different time steps). EDM can be used to make predictions based on patterns in long-term data such as environmental drivers and are unbiased by predetermined model equations. EDM can work particularly well for short-lived species (Giron-Nava et al., 2017; Munch et al., 2018). Preliminary work conducted using EDM indicated there is the capability to forecast market squid landings, tease out complex spatial and temporal dynamics, and highlight survey information of greatest value.

During the 2023-2024 SFAC process, members were interested in exploring alternative, forecast-driven, or in-season ways to manage catch. In response, the Department in collaboration with a post-doc investigator, explored the potential use of EDMs to forecast future squid landings in response to varying fishing effort and climate scenarios. EDM can be used to make predictions based on patterns in long-term data such as environmental drivers, and work particularly well for short-lived species. EDM work during the 2023-2024 SFAC process focused on forecasting future squid landings and CPUE in response

to varying levels of effort and environmental conditions. EDM is an area for further exploration given that expansions, shifts, or dramatic changes in market squid landings (or proxies for abundance) at various life stages are likely to occur under environmental extremes and changes.

Chapter 5. Future Management Needs and Management Costs

5.1. Current Information Gaps

The primary information gaps for the market squid fishery are outlined in the Department's Market Squid Enhanced Status Report (wildlife.ca.gov/marine) and include the following main areas: egg escapement model assumptions; further exploring climate readiness and oceanographic variables, and ageing. Additionally, moving fisheries-dependent data collection to a digital platform (e-logs) is a top priority. The Department would also greatly benefit from more long-term fisheries-independent data collection, including continued collaboration with academia scientists and organizations, non-governmental organizations, outside agencies, and commercial and recreational fishery participants. Future efforts could be aimed at expanding the inflow of fishery-independent data to help determine ecosystem level connections. Understanding how shifting oceanographic conditions govern changes in market squid physiology, behavior, and spawning success will help to inform future management.

5.2. Potential Future Management Changes

The California market squid population is inherently resilient to fishing and largely dependent on seasonal recruitments. The fishing fleet targets market squid when available and turns to alternative fisheries when squid are not aggregating. While market squid is currently considered a sustainable fishery with an adequate regulatory framework, opportunities may exist in the future to improve fishery management.

5.3. Annual Management Cost

The estimated costs for implementation of the MSFMP are grouped into two main categories: 1) enforcement and 2) ongoing management and research. These costs estimates were produced by projecting the time to perform certain tasks such as the



enforcement of regulations, collection and analysis of data, and review of documents. ~~Generally, these cost projections are underestimated because there is no way to determine how difficult some issues may be. Nevertheless, estimates are useful for projecting costs and for comparing different options. These cost estimates include expenditures that are incurred regardless of whether or not the MSFMP is partially or fully adopted. These expenses are termed “sunk” costs and equate to the costs of enforcement, data collection, research and monitoring that the Department must perform as part of its resource stewardship charge.~~ Annual management costs of the market squid fishery have increased since implementation of the original 2005 MSFMP. Current annual management costs include work in the continuation, maintenance, and improvement of the port sampling and logbook programs. Costs also include Department staff support for various collaborative research projects over time. Management costs also include enforcement of adopted regulations used to ensure the fishery’s sustainability. Enforcement costs include both on-the-water monitoring as well as dockside and office-based work to follow through with enforcement actions. Estimated costs to implement the MSMFP, using 2025 staffing and salaries, are summarized in Table 5-1.

Table 5-1. Estimated annual implementation costs for the MSFMP (2025 baseline).

<u>Cost Category</u>	<u>Annual Cost*</u>	<u>Percent of Year</u>	<u>Annual Cost</u>
<u>Environmental Program Manager</u>	<u>\$287,490</u>	<u>20%</u>	<u>\$57,498</u>
<u>Senior Environmental Scientist (Supervisor)</u>	<u>\$248,622</u>	<u>30%</u>	<u>\$74,587</u>
<u>Senior Environmental Scientist (Specialist)</u>	<u>\$193,982</u>	<u>100%</u>	<u>\$193,982</u>
<u>Environmental Scientist (2)</u>	<u>\$300,852</u>	<u>50%</u>	<u>\$150,426</u>
<u>Fish and Wildlife Scientific Aid (4)</u>	<u>\$191,852</u>	<u>75%</u>	<u>\$143,859</u>
<u>Fish and Game Captain</u>	<u>\$241,504</u>	<u>20%</u>	<u>\$48,301</u>
<u>Fish And Game Lieutenant (Supervisor) (2)</u>	<u>\$429,074</u>	<u>15%</u>	<u>\$64,361</u>
<u>Fish and Game Warden (6)</u>	<u>\$970,926</u>	<u>15%</u>	<u>\$145,639</u>
<u>Management Operating Cost</u>	<u>\$50,000</u>	<u>--</u>	<u>\$50,000</u>
<u>Enforcement Operating Cost</u>	<u>\$50,000</u>	<u>--</u>	<u>\$50,000</u>
<u>Total Annual Cost</u>	<u>--</u>	<u>--</u>	<u>\$978,653</u>

*Annual personnel costs include salaries/wages and benefits.



Enforcement activities within the Department are coded to programs, such as the Marine Life Management Act (MLMA) and Marine Life Protection Act (MLPA) rather than a specific species or fishery. This makes it difficult to determine the accurately estimate enforcement in any individual fishery.

Although no enforcement officers are strictly assigned to the squid fishery, it is estimated that 8% of an officer's time is spent on squid enforcement (J. Gross pers. comm.). The majority of the enforcement takes place at the peak times of the fishery. Within the major squid landing ports (Moss Landing, Monterey Bay, Port Hueneme, Ventura, San Pedro, and Terminal Island) there are nine lieutenants and 20 wardens. Enforcement takes place on land, at the point of landing and at squid processors, and at sea using the Department's five patrol boats and nine patrol skiffs.

The 8% estimate is further supported by landings data. In 2001 and 2002, the number of squid landings, as compared to all landings, was 8.3% for the major squid ports (identified above). This is assumed to equal an estimated 8% of enforcement time spent on squid (squid landings: 6,100; total commercial landings: 73,200 commercial landings for the major squid landing ports). MSFMP (2025 baseline).

Using this value (8%), the estimated annual costs for enforcement in the squid fishery was determined as follows:

Staffing summary: 9 lieutenants, 20 wardens

—— Annual enforcement costs

—— (including operating expenses): —— \$2,500,000

—— Percent estimate of squid enforcement —— x 8%

Total annual enforcement cost: —— \$ 200,000

5.2 Ongoing Management and Research

In 1998, fishery managers, researchers, and statisticians from the Department and NOAA Fisheries met to develop both fishery dependent and fishery independent sampling and monitoring programs for market squid. During this meeting, goals were identified and a series of sampling protocols were developed to attain data necessary to expand existing knowledge of basic



market squid biology, life history, and commercial fishing activity (CDFG-2001c).

To acquire better information on squid taken in the California fishery, the Department developed a monitoring system to track variations over the season in squid length, weight, sex and maturity, and to accurately profile the State's commercial market squid fishery by tabulating catch data on a daily basis. Additional efforts to improve identification of the vessels participating in the fishery, characterize the use of gear to take squid, and determine the number of vessels using each gear type, fishing and landing patterns, market value, and product distribution, were undertaken as well.

Efforts to achieve these goals and to better manage the market squid fishery required the implementation of different programs. As part of the development of the monitoring system, a port sampling program was established in 1998 to collect fishery and biological data. Research cruises conducted by the Department and by outside contractors since 1998 have provided vital information about spawning habitats and egg production. In 1999, a logbook program designed to collect information on effort in the fishery was developed and implemented, where both roundhaul and light vessels provide information on their catch and effort during each day of fishing activity. The purpose of this program was to increase the amount and accuracy of data collected and to supplement the landing receipt program already in place. The estimated costs of these programs are separated into fishery dependent monitoring and fishery independent research.

Additional management tasks include the Department's responsibility to communicate fishery information to stakeholders on a timely basis. This may require preparation and mailing of newsletters or letters and the creation and maintenance of internet web pages. Also, the Department needs to communicate with an advisory committee (if formed), the Commission, and the general public.

5.2.1 Fishery Dependent Monitoring



~~Collection of fishery-dependent biological data is authorized under FGC §8010. Written fishing records (logbooks) are required under FGC §8026, and CCR Title 14 §140 and §149. The use of landing receipts is required under FGC §8043. The costs of fishery-dependent monitoring can be broken down into two parts: 1) the port sampling program and 2) the logbook and the landing receipt program.~~

- ~~Fishery-dependent samples are taken from squid landings at the three major port areas (Monterey/Moss Landing, Santa Barbara/Ventura/Port Hueneme, and San Pedro/Terminal Island). There is a monthly goal of 25 samples from each southern port and 20 samples from Monterey. One sample is taken every day each week, and an additional sample is required on two randomly chosen days of the week. A sample consists of 30 squid randomly selected from one vessel. Samplers observe at least half of the load and collect squid throughout the observation time. Samplers also interview the captain to learn where the vessel fished, how many sets were made, if a light boat was used, size of the catch, and any anecdotal information. Samples are not collected when there are no landings.~~

~~The samples are processed in the lab to collect information on length, weight, sex, and gonadal condition. Statoliths and a sample of mantle tissue are taken from the first male and first five females of every sample. Gonads are preserved from the first five females of every sample. The estimated annual costs for these activities are as follows:~~

~~Staffing Summary: 2 Personnel Year (PY) Laboratory Assistants, 3.5 PY Temporary Help~~

~~— Staff: _____ \$160,000~~

~~— Annual operating expenditures: _____ 69,000~~

~~_____~~
~~— Total annual costs: _____ \$229,000~~

- ~~The Department's statistical database and landing receipt and logbook programs provide vital information about the squid fishery. The estimated annual costs associated with the collection and maintenance of this information are as follows:~~

~~Staffing Summary: 1 PY Marine Biologist, 1 PY Temporary Help~~

~~— Staff: _____ \$ 85,000~~



—Annual operating expenditures:————\$19,000

—————
—Total annual costs:————\$104,000

5.2.2 Fishery Independent Research

As part of the legislatively directed initial three year study (April 1998–2001, SB-364), approximately \$240,000 annually was directed toward scientific research efforts outside the Department via contracts with the University of California. The objectives of these projects were to develop and evaluate applications of escapement and depletion modeling strategies to the California market squid fishery, obtain better information on squid life history, explore the stock structure of the squid population, and improve understanding of the relationships between age, growth, maturity, and fecundity. Some of the contract efforts required fishery independent sampling aboard fishery research vessels, which provided a valuable basis for future science-based management strategies that may be used in lieu of proposed regulatory measures developed from catch information alone.

Within the Department, research cruises focused on collecting fishery-independent data have been undertaken. Annual trawl cruises from 1998 to 2001 have been used in development of egg escapement models, specifically to capture female squid to increase the robustness of the current model. Other research cruises have utilized a remotely operated vehicle (ROV) to characterize market squid spawning habitat, including the depth and temperature where egg cases are deposited as well as to develop an index of egg case abundance. The ROV cruises have been conducted twice a year to coincide with peak squid fishing activity. The estimated annual costs for continuing the Department fishery independent research are as follows:

—————
———Staffing Summary: 1 Personnel Year (PY) Associate Biologist, 2 PY Marine

Biologists, 0.25 PY Senior Biologist

Staff:————\$219,000



—Annual operating expenditures:—————215,000

—Total annual costs:—————\$434,000

5.3 Summary of Estimated Annual Costs of Implementation

Managing the fishery and developing an estimation of optimum yield will require continued monitoring and collection of fishery-dependent and fishery-independent data. Fishery-dependent biological data and fishery-independent biological data are necessary to estimate population size and reproductive success. Edited logbook and landing receipt data can be used to monitor trends in the fishery and estimate fishery effort.

The estimated annual cost of market squid enforcement is \$200,000. Additional regulations for the squid fishery presented through this management plan are expected to require additional enforcement effort and cost that has not been estimated. Presently, there is no funding specified to offset these costs. Monies should be designated to properly fund the enforcement of the market squid fishery management plan. The estimated annual cost for ongoing and future research in the market squid project, including statistical data, fishery-dependent, and fishery-independent sampling is approximately \$964,000. Current levels of funding are estimated at \$533,000, which excludes all research that the Department was previously conducting. The funding for these operations is from the Fish and Game Preservation Fund.

The following is a summary of the estimated annual costs of full and partial implementation:

Description	Full Program	Partial Program
Enforcement	\$200,000	\$200,000

Fishery-dependent monitoring:

Port sampling	\$229,000	\$229,000
Logbooks/landing receipts	\$101,000	\$104,000



Ongoing management and research

Research surveys \$ 434,000

Total Implementation Expenses \$964,000 \$533,000

<u>Cost Category</u>	<u>Annual Cost*</u>	<u>Percent of Year</u>	<u>Annual Cost</u>
<u>Environmental Program Manager</u>	<u>\$287,490</u>	<u>20%</u>	<u>\$57,498</u>
<u>Senior Environmental Scientist (Supervisor)</u>	<u>\$248,622</u>	<u>30%</u>	<u>\$74,587</u>
<u>Senior Environmental Scientist (Specialist)</u>	<u>\$193,982</u>	<u>100%</u>	<u>\$193,982</u>
<u>Environmental Scientist (2)</u>	<u>\$300,852</u>	<u>50%</u>	<u>\$150,426</u>
<u>Fish and Wildlife Scientific Aid (4)</u>	<u>\$191,852</u>	<u>75%</u>	<u>\$143,859</u>
<u>Fish and Game Captain</u>	<u>\$241,504</u>	<u>20%</u>	<u>\$48,301</u>
<u>Fish And Game Lieutenant (Supervisor) (2)</u>	<u>\$429,074</u>	<u>15%</u>	<u>\$64,361</u>
<u>Fish and Game Warden (6)</u>	<u>\$970,926</u>	<u>15%</u>	<u>\$145,639</u>
<u>Management Operating Cost</u>	<u>\$50,000</u>	<u>--</u>	<u>\$50,000</u>
<u>Enforcement Operating Cost</u>	<u>\$50,000</u>	<u>--</u>	<u>\$50,000</u>
<u>Total Annual Cost</u>	<u>--</u>	<u>--</u>	<u>\$978,653</u>

*Annual personnel costs include salaries/wages and benefits.



Literature Cited

Ainley, D.G., ~~L.B. Spear, S.G.L.B., Allen, S.G.,~~ and C.A. Ribic. 1996. Temporal and spatial patterns in the diet of the common murre in California waters. ~~The Condor~~: 98:691-705.

Anderson F.E. 2000. Phylogenetic relationships among loliginid squids (Cephalopoda: Myopsida) based on analyses of multiple data sets. Zoological Journal of the Linnean Society 130:603-633.

Baltz~~K, D.M.~~ and ~~J.G. V.~~ Morejohn. 1977. Food habits and niche overlap of seabirds wintering on Monterey Bay, California. ~~The Auk~~, 94: ~~(3):~~526–543.

~~Bergmann, G., D. Hanan, S.F. Herrick, K. Hill, L. Jacobson, J. Morgan, R. Parrish, J. Spratt, and J. Walker. 1998. Amendment 8 to the northern anchovy fishery management plan incorporating a name change to: The coastal pelagic species fishery management plan. December 1998, p. D-9.~~

~~Benjamins, S. (2000). Cephalopod predators. The Cephalopod Page. http://www.nhm.ac.uk/hosted_sites/tcp/pred4.html (28 Nov. 2001)~~

Berry, SS. 1911. Notes on some cephalopods in the collection of the University of California. University of California Publications in Zoology 8(7):301-310.

Bettencourt, B., ~~L.~~Coelho, ~~J.P.L.,~~ Andrade, ~~J.P.,~~ and A. Guerra. 1996. Age and growth of the squid *Loligo vulgaris* off the south coast of Portugal, using statolith analysis. ~~J. Moll. Stud.~~Journal of Molluscan Studies 62:359-366.

Birt, T.P., Carter, H.R., Whitworth, D.L., McDonald, A., Newman, S.H., Gress, F., Palacios, E., Koepke, J.S., and V.L. Friesen. 2012. Rangewide population genetic structure of Xantus's Murrelet (*Synthliboramphus hypoleucus*), The Auk, Volume 129, Issue 1, 1 January 2012, Pages 44–55, <https://doi.org/10.1525/auk.2011.11011>

~~Bower, J. 2000. The dark side of light. Audubon. 102(2):92-97.~~

.

Butler, J., ~~Fuller, D., and M. Yaremko.~~ 1999. Age and growth of market squid (*Loligo opalescens*) off California during 1998. CalCOFI Reports 40:191-195.

~~Butler, J., Wagner, J., and A. Henry. 2001. Age and growth of *Loligo opalescens*. Pacific Fisheries Management Council PFMC Squid Stock Assessment Review. 13 pp.~~

~~California Cooperative Oceanic Fisheries Investigations (CalCOFI). 2021. <https://calcofi.org>. Accessed on June 31, 2022.~~

~~California Current Integrated Ecosystem Assessment (CCIEA). 2023. <https://oceanview.pfeg.noaa.gov/cciea-plotting/?opentab=0&ind=27>~~

~~CDFG-. Accessed on July 9, 2024.~~

~~California Department of Fish and Game. 2001b. Draft, Constituent involvement plan for the nearshore fishery management plan (08-January 2001). Resources Agency, (CDFG). March 19, 2001. Status of the Market Squid fishery with Recommendations for a Conservation and Management Plan. California Department of Fish and Game. 11 pp. Marine Region Report to Legislature. 73 p.~~

~~CDFG-. March 25, 2005. Final Market Squid Fishery Management Plan. 566 p.~~

~~California Department of Fish and Wildlife (CDFW). 2024a. Market Squid, *Doryteuthis (Loligo) opalescens*. Enhanced Status Report. <https://marinespecies.wildlife.ca.gov/market-squid/true/>.~~

~~CDFW. 2024b. 2024 California commercial regulations fishing digest. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=191712&inlineGame>. 2001c. Status of the.~~

~~Cheng, S., Gold, M., Rodriguez, N., and P. Barber. 2021. Genome-wide SNPs reveal complex fine-scale population structure in the California market squid fishery with recommendations for a conservation and management plan. Calif. Dept. of Fish and Game Marine Region Report to the Legislature. 73 pp. (*Doryteuthis opalescens*). Conservation Genetics 22:97-110.~~

~~Carretta, J.V., M.M. Muto, J. Barlow, and J. Baker. 2002. U.S. Pacific Marine Mammal Stock Assessments: 2002. U.S. Department of Commerce, NOAA Technical Memorandum NOAA Fisheries SWFSC 346. 286p.~~

~~Carter, H.R., G.J. McChesney, D.L. Jaques, G.S. Strong, M.W. Parker, J.E. Takekawa, D.L. Jory, and D.L. Whitworth. 1992. Breeding populations of seabirds in California, 1989-1991. Volume 1 – populations estimates, and Volume 2 – colony maps and appendices. Unpublished draft final report, U.S. Fish and Wildlife Service, Northern Prairie Wildlife Research Center, Dixon, California.~~

~~Carter, H.R., A. L. Sowls, M.S. Rodway, U.W. Wilson, R.W. Lowe, G.J. McChesney, F. Gress, and D.W. Anderson. 1995. Population size, trends, and conservation problems of the double-crested cormorant on the pacific coast of North America. Colonial Waterbirds. 18(Special Publication 1): 189-215.~~

~~Carter, H.R., D.L. Whitworth, J.Y. Takekawa, T.W. Keeney, and P.R. Kelly. 2000. At-sea threats to Xantus' murrelets (*Synthliboramphus hypoleucus*) in the Southern California Bight. In D.R. Browne, K.K. Mitchell, and H.W. Chaney (Eds.), Proceedings of the fifth California Islands symposium, 29 March to 1 April 1999, U.S. Minerals Management Service, Camarillo, California, pp. 435-447.~~

~~Carter, H.R., D. S. Gilmer, J. E. Takekawa, R. W. Lowe and U. W. Wilson. 2001a. Breeding Seabirds in California, Oregon, and Washington. Found at:~~

~~Carter, H.R., U.W. Wilson, R.W. Lowe, M.S. Rodway, D.A. Manuwal, J.E. Takekawa, and J.L. Yee. 2001b. Population trends of the common murre (*Uria aadge californica*). In D. A. Manuwal, H.R. Carter, T.S. Zimmerman, and D.L. Orthmeyer (Eds.), Biology and conservation of the common murre in California, Oregon, Washington, and British Columbia. Volume 1: Natural history and population trends. U.S. Geological Survey, Biological Resources Division, Information and Technology Report USDS/BRD/ITR2000-0012, Washington, D.C., pp. 33—128.~~

~~Claritas. 1996. 1996 Proprietary Estimates for all Census Tracts, Counties, and Minor Civil Divisions in the US. Claritas Data Services.~~

~~CTTCA: California Technology Trade and Commerce Agency. 2000. Labor force and occupations. [\(02/01\)](http://.).~~

Dailey, M.D. 1969. A survey of Helminth parasites in the squid *Loligo opalescens*, Smelt, *Osmerus mordax*, ~~Jack Mackerel~~jack mackerel, *Trachurus symmetricus*, and Pacific ~~Mackerel~~mackerel, *Scomber japonicus*. California Fish and Game, 55(3):221-226.

~~Dayton, P.K., S. Thrush, and F.C. Coleman. 2002. Ecological Effects of Fishing in Marine Ecosystems of the United States. Pew Oceans Commission. Arlington, Virginia. 44pp.~~

~~Dick, M.H. and W. Donaldson. 1978. Fishing vessel endangered by crested auklet landings. Condor. 80: 235-236.~~

Dickerson, T. and R. Leos. 1992. California market squid. In California's living marine resources and their utilization, CA Sea Grant, pp. 36-39.

~~Dohl, T. Dorval, E., Crone, P., K. S. Norris, R. C. Guess, J. D. Bryant, and M. W. Honig. 1980. Summary J.D. McDaniel. 2013. Variability of marine mammal egg escapement, fishing mortality and seabird surveys of~~

spawning population in the Southern-market squid fishery in the California Bight area, 1975-1978. Part II. Cetacea of the Southern Current Ecosystem. Marine and Freshwater Research 64(1):80-90.

Dorval, E., Porzio, D., and K. Grady. 2024. An update of egg escapement, fishing mortality, and spawning stock biomass for the California Bight. Final Report market squid (*Doryteuthis opalescens*) fishery from 1999 to 2022. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-701.
<https://repository.library.noaa.gov/view/noaa/61452>~~the Bureau.~~

Fiechter, J., Huckstadt, L.A., Rose, K.A., and D.P. Costa. 2016. A fully coupled ecosystem model to predict foraging ecology of Land Management, NTIS Rep. No. PB81248189. 414 apex predators in the California Current. Marine Ecology Progress Series 556:273-285.

Fields, W.G. 1965. The structure, development, food relations, reproduction, and life history of the squid *Loligo opalescens* Berry. California Department of Fish and Game Fish Bulletin 131:1-108.

Forsythe, J., ~~N~~Kangas, N., and R. Hanlon. 2004. Does the California market squid (*Loligo opalescens*) spawn naturally during the day or night? A note on the successful use of ROVs to obtain basic fisheries biology data. ~~Fish. Bull.~~Fishery Bulletin 102:389-392.

~~Furness, R.W. and M.L. Tasker. 2000. Seabird-fishery interactions: quantifying the sensitivity of seabirds to reductions in sandeel abundance, and the identification of key areas for sensitive birds in the north sea. Mar. Ecol. Prog. Ser. 202:253-264.~~

Gabriel, W.L., Sissenwine, M.P., and W.J. Overholtz. 1989. Analysis of spawning stock biomass per recruit: An example from Georges Bank haddock. North American Journal of Fisheries Management 9:383-391.

Gilly, W.M. 2003. Population analysis of the California ~~Market Squid~~market squid, *Loligo opalescens* using DNA microsatellite analysis. Final report to the California Department of Fish and Game. Contract Number FG7334MR.

Gilly, W., ~~M.~~Fountain, M., and A. Novakovic. 2001. Population analysis of the California market squid, *Loligo opalescens*, using DNA microsatellite analysis. *In* Status of the market squid fishery with recommendations for a conservation and management plan. ~~Calif. Dept.~~California Department of Fish and Game Marine Region Report to the Legislature. Appendix D.

Giron-Nava, A., James, C.C., Johnson, A.F., Dannecker, D., Kolody, B., Lee, A., Nagarkar, M. Pao, G.M., Ye, H., Johns, D.G., and G. Sugihara. 2017. Quantitative argument for long-term ecological monitoring. Marine Ecology Progress Series 572:269-274.

Groot, C. and L. Margolis. 1991. Pacific salmon life histories. UBC Press, Vancouver, Canada. ~~500p~~500 pp.

~~Hacker, S.E. 1992. Stomach contents of four short finned pilot whales (*Globicephala macrorhynchus*) from the Southern California Bight. Marine Mammal Science 8(1): 76-81.~~

Hanlon, R.T., ~~N.~~Kangas, N., and J.W. Forsythe. 2004. Egg-capsule deposition and how behavioral interactions influence spawning rate in the squid *Loligo opalescens* in Monterey Bay, CA. Marine Biology 145:923-930.

Hardwick, J.E. and J.D. Spratt. 1979. Indices of the availability of market squid, *Loligo opalescens*, to the Monterey Bay fishery. CalCOFI Reports 20:35-39.

Hastings, S., and S. MacWilliams. 1999. Multi-species and multi-interest management: an ecosystem approach to market squid (*Loligo opalescens*) harvest in California. Marine Sanctuaries Conservation Series MSD-99-1. U.S. Dept. of Commerce, ~~National Oceanic and Atmospheric Administration~~NOAA, Marine Sanctuaries Division, Silver Spring, MD. 24 pp.

~~Henry, A. E., 1997. Prey Dynamics of Pacific Harbor Seals and California Sea Lion foraging near San Nicolas Island. MS Thesis, San Diego State University, San Diego, California. pp. 115.~~

Hill, K.T. and M.L. Yaremko. 1997. Spatial and temporal distributions of market squid (*Loligo opalescens*) off California based on commercial landings and aerial observation data. Abstract in California Cooperative Fisheries InvestigationsCalCOFI Program, 28-30 October 1997 at Lake Arrowhead, California.

~~Hunter, J.R., and N.C.H. Lo. 1997. The daily egg production method of biomass estimation: some problems and potential improvements. Ozeanografika 2: 41-67.~~

Hunt, J.C., Zeidberg, L.D., Hamner, W.M., and B.H. Robison. 2000. The behavior of *Loligo opalescens* (Mollusca: Cephalopoda) as observed by remotely operated vehicle (ROV). Journal of Marine Biological Association U.K. 80: 873-883.

- Hurley, A.C. 1977. Mating behavior of the squid *Loligo opalescens*. *Marine Behavior and Physiology* 4(3): 195–203.
- Hurley, G.V., Odense, P., O'Dor, R.K. ~~& and~~ E.G. Dawe, 1985. ~~Strontium~~Strontium labelling for verifying daily growth increments in the statoliths of the short-finned squid (*Illex illecebrosus*). ~~Can.J. Fish. Aquat. Sci.~~Canadian Journal of Fisheries and Aquatic Sciences 42: 380-383.
- Isaac, G., ~~H.~~ Neumeister, ~~H.~~, and W.F. Gilly. 2001. The effects of temperature on early life stages of California squid (*Loligo opalescens*). ~~Pacific Fisheries Management Council~~PFMC Squid Stock Assessment Review. 15 pp.
- Jackson, G.D. 1990a. The use of tetracycline staining techniques to determine statolith growth ring periodicity in the tropical loliginid squids, *Loliolus noctiluca* and *Loligo chinensis*. *Veliger* 33: 389-393.
- Jackson, G.D. 1990b. Age and growth of the tropical nearshore loliginid squid *Sepioteuthis lessoniana* determined from statolith growth-ring analysis. *Fishery Bulletin* 88: 113-118.
- Jackson, G.D. 1994. Statolith age estimates of the loliginid squid *Loligo opalescens* (Mollusca: Cephalopoda) corroboration with culture data. - ~~Bull. Mar. Sci.~~Bulletin of Marine Science 54: 554-557.
- Jackson, G., ~~D.~~ 1998. Research into the life history of *Loligo opalescens*: where to from here? ~~Calif. Coop. Oceanic Fish. Invest. Rep.~~CalCOFI Reports 39:101-107.
- Jackson, G.D. and M.L. Domeier. 2003. The effects of an extraordinary El Niño / La Niña event on the size and growth of the squid *Loligo opalescens* off southern California. *Marine Biology* 142:925-935.
- ~~Karpov, K.A.~~ Jereb, P., Vecchione, M., and C.F.E. Roper. 2010. Family *Loliginidae*. In P. Jereb and C.F.E. Roper, eds. Cephalopods of the world. An annotated and illustrated catalogue of species known to date. Volume 2. Myopsid and Oegopsid Squids. FAO Species Catalogue for Fishery Purposes 4(2): 38-117.
- Karpov, K.A. and G.M. Cailliet. 1978. Feeding dynamics of *Loligo opalescens*. ~~Calif. Dept.~~California Department of Fish and Game, Fish Bulletin 169:45-65.

Karpov, K.A. and G.M. Cailliet. 1979. Prey composition of the market squid, *Loligo opalescens* Berry, in relation to depth and location of capture, size of squid, and sex of spawning squid. CalCOFI Rep.Reports 20:51-57.

Kato, S. and J.E. Hardwick. 1975. The California squid fishery. FAO Fish. Rep.Fisheries. Report 170:107-116.

~~Kudroshoff, T. C., A. E. Henry, and M. L. Koslow, J.A. and C. Allen. 2011. The influence of the ocean environment on the abundance of market squid, *Doryteuthis (= Loligo) opalescens*, paralarvae in the Southern California Bight. CalCOFI Reports 52:205-13.~~

~~Yaremko. 2000. Frequency and distribution of market squid egg cases off California. Abstract. Fifty-first California Cooperative Fisheries Investigations Conference. Lake Arrowhead, CA. October 2000.~~

Lipinski, M. 1986. Methods for the validation of squid age from statoliths. ~~J. Mar. Biol. Assoc. U.K. 66:~~ Journal of the Marine Biological Association of the United Kingdom 66:506-526.

Lowry, M.S. and J.V. Carretta. 1999. Market squid (*Loligo opalescens*) in the diet of California sea lions (~~*Salophus*~~*Zalophus* *californianus*) in southern California (1981-1995). CalCOFI Rep.Reports. 40:196-202.

~~Lowry, M.S., C.W. Oliver, C. Macky, and J.B. Wexler. 1990. Food habits of California sea lions *Zalophus californianus* at San Clemente Island, California, 1981-86. Fishery Bulletin, U.S. 88: 509-521.~~

Lutz, S. and L. Pendleton. 2000. An assessment of the market squid and other major commercial wetfish fisheries of southern California. USC- Southern California Fisheries Project.

Lutz, S. and L. Pendleton. 2001. Socio-economic study of the San Pedro historic purse seine fleet. ~~USCFISH. Coastal Community Research, Wrigley Institute for Environmental Studies, University of Southern California. Los Angeles, CA. 39 pp~~

Macewicz, B.J., ~~J.R.~~ Hunter, J.R. and N.C.H. Lo. 2001a. Validation and monitoring of the escapement fecundity of market squid. Project report to ~~Calif. Dept.~~California Department of Fish and Game. Document #2, ~~Pacific Fisheries Management Council~~PFMC Squid ~~stock assessment review. Stock Assessment Review.~~ 8 pp.

Macewicz, B.J., ~~J.R.~~ Hunter, J.R., Lo, N.C.H. ~~Lo,~~ and E.L. LaCasella. 2001b. Lifetime fecundity of the market squid, *Loligo opalescens*. Document #1,

~~Pacific Fisheries Management Council~~ PFMC ~~Squid stock assessment review. Stock Assessment Review.~~ 19 pp.

Macewicz, B.J., ~~J.R.~~ Hunter, J.R., Lo, N.C.H. ~~Lo,~~ and E.L. LaCasella. ~~2003~~ 2004. Fecundity, egg deposition, and mortality of market squid (*Loligo opalescens*). Fishery Bulletin 102(2):306-327.

~~MacGinite, G.E. and N. MacGinite. 1949. Natural History of Marine Mammals. New York: McGraw Hill. P. 473.~~

~~Maxwell, M.R. 2001. Stock assessment models., Jacobson, L.D., and R.J. Conser. 2005. Eggs-per-recruit model for management of the California market squid, (Loligo opalescens. Document #7, Pacific-) fishery. Canadian Journal of Fisheries Management Council Squid stock assessment review. 53 pp.~~

~~May, R.M., J.R. Beddington, C.W. Clark, S.J. Holt, and R.W. Laws. 1979. Management of multi-species fisheries. Science. 205:267-277~~ Aquatic Sciences 62(7):1640-1650.

~~McGowan, J.A. 1954. Observations on the sexual behavior and spawning of the squid, Loligo opalescens, at La Jolla, California. Calif. Fish Game Fish Bulletin 40(1): 47-55.~~

~~Miller D.J., M.J. Herder, and J.P. Scholl. 1983. California marine mammal/fishery interaction study, 1979 to 1981. NOAA Fisheries—SWFSC Admin. Rep. LJ8313C. 234pp.~~

~~Morejohn, G.V., J.T.~~ Harvey, J.T., and L.T. Krasnow. 1978. The importance of *Loligo opalescens* in the food web of marine vertebrates in Monterey Bay, California. ~~Calif. Dept.~~ California Department of Fish and Game, Fish Bulletin 169:67-98.

~~Morris, R.H., D.P.~~ Abbott, D.P., and E.C. Haderlie. 1980. Intertidal Invertebrates of California. Stanford: Stanford University Press. ~~p.~~ 690. ~~—— pp.~~

Marine Stewardship Council (MSC). 2023. California Market Squid Producers Alliance Purse Seine. Public Certification Report.
<https://cert.msc.org/FileLoader/FileLinkDownload.aspx/GetFile?encryptedKey=YBrd9qdSdYebTvdXylxCmpGLLSrND5YzuqFP6K1ejnD65qo8UjKGSi7dUI0+CvB4>

~~NMFS:National Marine Fisheries Service (NOAA Fisheries). 2001b. Alaska groundfish fisheries, draft programmatic environmental impact statement. United States Department of Commerce, National Oceanic and Atmospheric Administration, Alaska Region.~~

~~NMFS/NOAA 2001. National Oceanic and Atmospheric Administration, National Marine Fisheries Service~~

Munch, S.B., Giron-Nava, A., and G. Sugihara. 2018. Nonlinear dynamics and noise in fisheries recruitment: A global meta-analysis. Fish and Fisheries 19:964-973.

NOAA. 2023. List of Fisheries <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries#lists-of-fisheries>. Accessed on July 9, 2024.

NMFS/NOAA/OPR (2001) Commercial Fishery Interactions.

NOAA /NCCOS. 2003. A Biogeographic Assessment off North/Central California: To Support the Joint Management Plan Review for Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries: Phase I— Marine Fishes, Birds and Mammals. National Centers for Coastal Ocean Science. Silver Spring, MD 145 pp.

NOAA/NOS 2003a. Socioeconomic Impact Analysis of Marine Reserve Alternatives for the Channel Islands National Marine Sanctuary. April 8, 2003. Dr. Vernon R. Leeworthy and Peter C. Wiley. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service.

NOAA/NOS. 2003b. Gulf of the Farallones National Marine Sanctuary State of the Sanctuary Report. National Ocean Service. Silver Springs, MD. 32pp.

NOAA/NMFS (2003). Commercial fisheries dependent data. <http://www.st.nmfs.gov/st1/econ/data.html>.

National Research Council. 2001. Marine protected areas; Tools for sustaining ocean ecosystems. Nat. Acad. Press. Washington DC. 272 pp.

O'Dor, R.K. and D.M. Webber 1986. The constraints on cephalopods: why squid aren't fish. [Can. J. Zool./Canadian Journal of Zoology](#). 64:1591-1605.

Okutani, T. and J. McGowan. 1969. Systematics, distribution, and abundance of the epipelagic squid (Cephalopoda, Decapoda) larvae of the California Current April 1954 - March 1957. [Bull. Bulletin of Scripps Inst. of Oceanogr. Univ. Calif. 14](#)[Institute of Oceanography University of California](#)14: 1-90.

Oliphant, M.S. 1971. Pacific bonito food habits. Calif. Dept. Fish Game, Fish Bulletin-152: 64-82.

PFMC: Pacific Fishery Management Council- (PFMC). 1998. [Amendment 8 to the northern anchovy fishery management plan incorporating a name change to: The coastal pelagic species fishery management plan-draft amendment eight](#). Pp. A78-A90. December 1998, p. D-9.

~~PFMC: Pacific Fisheries Management Council. 2002. PFMC. 2002. Limited entry fleet capacity and market squid maximum sustainable yield control rule. Amendment 10 to the Coastal Pelagic Species Fishery Management Plan. July 2002. 224 pp.~~

~~PFMC. 2010. Status of the Pacific Coast Coastal Pelagic Species Fishery and Recommended Acceptable Biological Catches. 48, Stock Assessment and Fishery Evaluation. 79 pp.~~

~~PFMC: Pacific Fishery Management Council. 1998. The coastal pelagic species fishery management plan draft amendment eight. Pp. A78-A90.~~

~~PFMC Pacific Fishery Management Council Strategic Plan Development Committee. 2000. Groundfish Fishery Strategic Plan "Transition to Sustainability". Pacific Fishery Management Council. 65 pp.~~

~~PFMC. 2002. Limited entry fleet capacity and market squid maximum sustainable yield control rule. Amendment 10 to the PMFC. 2023. Coastal Pelagic Species Fishery Management Plan. Pacific Fishery Management Council. July 2002. 224 pp. As amended through Amendment 21.~~

~~PFMC. 2003. Status of the Pacific Coast coastal pelagic species fishery and recommended acceptable biological catches. Stock assessment and fishery evaluation—2003. Pacific Fishery Management Council. June 2003. 120pp.~~

~~Pomeroy, C., and M. Hunter-FitzSimmons. 2001. The Channel Islands Socio-economic organization of the California Market Squid Fishery. Summary prepared: Assessment for the March 21, 2001 Channel Islands Marine Reserves Working Group Meeting optimal resource management. California Sea Grant Project. Final Report. 18 pp.~~

~~Protasio, C.Q., Holder, A.M., and B.C. Brady. 2014. Changes in biological characteristics of the California market squid (*Doryteuthis opalescens*) from the California commercial fishery from 2000-01 to 2012-13. California Fish and Game 100(2):276-299.~~

~~Recksiek, C.W. and H.W. Frey (Editors). 1978.~~

~~Pomeroy, C., M. Hunter, and M. Los Huertos. 2002. Socioeconomic profile of the California wetfish industry. In D. Pleschner Steele (ed.) California's wetfish industry: It's importance past, present and future. Santa Barbara, CA: California Seafood Council (CD-ROM).~~

Preuss, T. Biological, oceanographic, and acoustic aspects of the market squid, *Loligo opalescens* Berry. California Department of Fish and Game, Fish Bulletin 169:67-98.

~~and W.F. Gilly. 2000. Role of prey capture experience in the development of the escape response in the squid *Loligo opalescens*: A physiological correlate in an identified neuron. Journal of Experimental Biology 203 (3): 559-565.~~

Reichow, D. and M.J. Smith. 1999. Highly variable microsatellites in the California market squid, *Loligo opalescens*. Marine Biotechnology. 1 (4) 403-406.

Reichow, D. and M.J. Smith. 2001. Microsatellites reveal high levels of gene flow among populations of California squid, *Loligo opalescens*. Molecular Ecology. 10(5) 1101-1109.

~~Reiss, C.S. M. Maxwell, J.R. Hunter, and A. Henry. In Submission. Environmental effects on population dynamics of *Loligo opalescens* in the southern California Bight. Submitted to California Cooperative Oceanic Fisheries Investigations Reports. 25pp.~~

Restrepo, V.R., ~~W.L. Gabriel, W.L.L., Low, A.D.L.L., MacCall, P.M.A.D., Mace, R.D.P.M., Methot, J.E.R.D., Powers, B.L.J.E., Taylor, G.G.B.L., Thompson, P.R.G.G., Wade, P.R., and J.F. Witzig.~~ 1998. Technical guidance on the use of precautionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. U.S. Dept. of Commerce, ~~National Oceanic and Atmospheric Administration~~ NOAA Technical Memorandum. 54 pp.

Riser, N.W. 1949. Studies on the Tetracyllidae. Unpublished PhD. Thesis, Department of Biology, Stanford University.

Roper, C.F.E. and M.J. Sweeney. 1984. Cephalopods of the world: An annotated and illustrated catalogue of species of interest to fisheries. FAO ~~Fish. Synop.~~ Fisheries Synopses 125(3): 277 pp.

Sinclair EH. 1992. Stomach contents of four short-finned pilot whales (*Globicephala macrorhynchus*) from the Southern California Bight. Marine Mammal Science 8(1):76-81.

Stewart, J.S., Hazen, E.L., Bograd, S.J., Byrnes, J.E., Foley, D.G., Gilly, W.F., Robison, B.H., and J.C. Field. 2014. Combined climate-and prey-mediated range expansion of Humboldt squid (*Dosidicus gigas*), a large marine predator in the California Current System. Global Change Biology 20(6):1832-1843.

Spratt, J.D. 1978. Age and growth of the market squid, *Loligo opalescens* Berry, in Monterey Bay. ~~Calif. Dep.~~ California Department of Fish and Game, Fish Bulletin 169:35-44.

~~Telfer, T. C., J. L. Sincock, G. V. Byrd, and J. R. Reed. 1987. Attraction of Hawaiian seabirds to lights: conservation efforts and effects of moon phase. Wildlife Society Bulletin. 15: 406-413.~~

~~Tricas, Timothy C. 1979. Relationships of the blue shark, *Prionace glauca*, and its prey species near Santa Catalina Island, California. Fishery Bulletin 77 (1): 175-182.~~

~~United States Dept. of Comm. 1999. Trends in United States coastal regions 1970-1998. (12/11/00).~~

~~U.S. Bureau of Labor Statistics. 2003. . <http://www.bls.gov/data/home.htm>.~~

~~U.S. Department of Commerce. 1997. RIMS II Regional Input-Output Modeling System multipliers. Regional Economic Analysis Division, Bureau of Economic Analysis, Washington, DC.~~

~~U.S. Fish and Wildlife Service. 1983. The California Brown Pelican Recovery Plan. Prepared by the USFWS under contract to Franklin Gress and Daniel W. Anderson (University of California, Davis). Published by USFWS, Portland, Oregon, pp. 50-52.~~

Sydeman, W.J., Hobson, K.A., Pyle, P., and E.B. McLaren. 1997 Trophic relationships among seabirds: Combined stable isotope and conventional dietary approach. The Condor 99:327-336.
Szoboszlai, A.I., Thayer, J.A., Wood, S.A., Sydeman, W.J., and L.E. Koehn. 2015. Forage species in predator diets: synthesis of data from the California Current. Ecological Informatics 29: 45-56.

Vecchione M., Shea E., Bussarawit S., Anderson R., Alexeyev D., Lu C.-C., Okutani T., Roeleveld M., Chotiyaputta C., Roper C., Jorgensen E., and N. Sukramongkol. 2005. Systematics of Indo-West Pacific Loliginids. Phuket Marine Biological Center Research Bulletin 66:23-26.

Vojtkovich, M. 1998. The California fishery for market squid (*Loligo opalescens*). In Symposium of the CalCOFI conference. ~~California Cooperative Oceanic Fisheries Investigations~~ CalCOFI Reports. ~~Pp. 39:~~ 55-60.

Walthers, L.C. and G.E. Gillespie. 2002. A review of the biology of opal squid (*Loligo opalescens* Berry), and of selected Loliginid squid fisheries. Canadian Science Advisory Secretariat. 110 pp.

Warner, R.R., Hamilton, S.L., Sheehy, M.S., Zeidberg, L.D., Brady, B.C., and J.E. Caselle. 2009. Geographic variation in natal and early larval trace-elemental signatures in the statoliths of the market squid *Doryteuthis* (formerly *Loligo*) *opalescens*. Marine Ecology Progress Series, 379:109-121.

Weber, M.L. and B. Heneman. 2000. Guide to California's Marine Life Management Act. Bolinas, California: Common Knowledge Press. 133 pp.

Yang, W.T., Hanlon, R.T., Krejci, M.E., Hixon, R.F., and W.H. Hulet. 1983. Laboratory rearing of *Loligo opalescens*, the market squid of California. Aquaculture, 31(1):77-88.

Yang, W.T., Hixon, R.F., Turk, P.E., Krejci, M.E., Hulet, W.H., and R.T. Hanlon. 1986. Growth, behavior, and sexual maturation of the market squid, *Loligo opalescens*, cultured through the life cycle. Fishery Bulletin 84:771-798.

Zeidberg, L.D. and W.M. Hamner. 2002. Distribution of squid paralarvae, *Loligo opalescens* (Cephalopoda: Myopsida), in the Southern California Bight in the three years following the 1997-1998 El Niño. Marine Biology 141:111-122.

Zeidberg, L.D., Hamner, W., Moorehead, K., and E. Kristof. 2004. Egg masses of *Loligo opalescens* (Cephalopoda: Myopsida) in Monterey Bay, California following the El Nino event of 1997-1998. Bulletin of Marine Science 74(1):129-141.

Zeidberg, L.D., Hamner, W.M., Nezlin, N.P., and A. Henry. 2006. The fishery for California (*Loligo opalescens*) (Cephalopoda: Myopsida), from 1981 through 2003. Fishery Bulletin 104(1):46-59.

Zeidberg, L.D., Isaac, G., Widmer, C.L.,
Neumeister, H., and W.F. Gilly. _____

Personal Communications

~~Amoroso, Orlando. President Southern California Commercial Fishing Association. San Pedro, CA~~

~~Gross, Jorge. Warden. CDFG. Ventura, CA.~~

~~Henry, Annette. Survey Coordinator, NOAA Fisheries—SWFSC, La Jolla, CA (formerly Marine Biologist, CDFG, La Jolla, CA)~~

~~Hochberg, F. G. Curator of Invertebrate Zoology. Santa Barbara Museum of Natural History, Santa Barbara, CA~~

~~Monterey Coast Guard. Monterey, CA~~

~~Naughton, Maura, Seabird Biologist, USFWS, Migratory Bird and Habitats~~

~~Program, Portland, Oregon~~

~~Olivas, Tim. Patrol Captain. CDFG. Monterey, CA~~

~~Pomeroy, Caroline. Ph.D. Economist. Institute of Marine Sciences, University of California at Santa Cruz. Santa Cruz, CA~~

~~Reid, Tim, Seabird Biologist, Tasmanian Government, Tasmania~~

~~Scheiblauber, Steve. Harbor Master. Monterey, CA~~

~~Smith, Sgt. Orange County Harbor Department. Newport Beach, CA~~

~~Steers, Nick. Captain, Los Angeles County Fire Department, Lifeguard Operations. Zuma Beach, CA~~

~~Strasser, Paul. Owner, 22nd Street Sportfishing and MCIP. San Pedro, CA~~

~~Sumpter, Gail. City of Malibu Code Enforcement. Malibu, CA~~

~~Trapp, John, Biologist, USFWS, Div. Migratory Bird Management, Arlington, Virginia~~

~~Williams, Jeff, Seabird Biologist, USFWS, Alaska Maritime National Wildlife Refuge, Homer, Alaska~~

~~_____~~

2011a. Egg capsule hatch rate and incubation duration of the California market squid, *Doryteuthis (Loligo) opalescens*: insights from laboratory manipulations. Marine Ecology 32(4):468-79.

Zeidberg, L.D., Butler, J.L., Ramon, D., Cossio, A, Stierhoff, K.L., and A. Henry. 2011b. Estimation of spawning habitats of market squid (*Doryteuthis opalescens*) from field surveys of eggs off Central and Southern California. Marine Ecology 33(3):326-36.

Appendix A ~~Glossary~~

~~Appendix A.~~ Glossary of Terms and Abbreviations

A

Absolute Abundance - The total number of individuals in a population. This is rarely known, but usually estimated from relative abundance, although other methods may be used.

Abundance - See Relative Abundance or Absolute Abundance

Acceptable Biological Catch (ABC) - A term used that refers to the range of allowable catch for a species or species group. It is set each year by a scientific group created by the management agency. The agency then takes the ABC estimate and sets the annual Total Allowable Catch (TAC).

Adaptive Management - In regard to a marine fishery, adaptive management is a scientific policy that seeks to improve management of biological resources, particularly in areas of scientific uncertainty, by viewing program actions as tools for learning. Actions are designed so that even if they fail, they will provide useful information for future actions. Monitoring and evaluation shall be emphasized so that the interaction of different elements within the system can be better understood.

Age Class - A group of individual organisms of the same age in a population. "Year-Class" or "cohort" are terms generally synonymous with age class, but are

identified by the actual year in which the cohort was produced (e.g., 1991 year-class or sardines resulted from the 1991 spawning season).

Age Composition - Identifies the proportions of a population of fishes by age or age group.

Allocation - The opportunity to fish is distributed among user groups or individuals. The share that a user group receives is sometimes based on historic harvest amounts.

~~**Altricial** - A term used to describe the developmental pattern in birds in which newly hatched young are relatively immobile, have closed eyes, lack down, and must be cared for by the adults. Altricial young are born helpless and stay in the nest for a comparatively long time.~~

~~**Allowable Biological Catch (ABC)** – A term used that refers to the range of allowable catch for a species or species group. It is set each year by a scientific group created by the management agency. The agency then takes the ABC estimate and sets the annual Total Allowable Catch (TAC).~~

Assessment - A judgment made by a scientist or scientific body on the state of a resource (e.g., size, health, pollution impacts) usually for passing advice to management authority.

Availability - In a general sense, used to describe periods of poor (low availability) or good (high availability) catches, regardless of the size or health of a fish population. In a strict sense, it refers to the fraction of a population which is susceptible to fishing during a given fishing season.

B

Biomass - The total weight or numbers of a stock or population of fish at a given point in time. The **spawning biomass** is that portion of total biomass that is mature and spawning.

Brail net - A large dip net, sometimes used with the assistance of the vessel's hydraulics.

Bycatch - Fish or other marine life that are taken in a fishery but which are not the target of the fishery, including discards.

C

CalCOFI - California Cooperative Oceanic Fisheries Investigations.

Candidate Species - Officially noticed by the Commission as being under review by the Department of Fish and Game for addition to the rare, threatened, or endangered species lists.

Capacity Goal - The primary purpose of restricted access programs is to match the level of effort in a fishery to the health of the fishery resource, each restricted access program that is not based on individual transferable quotas shall identify a fishery capacity goal intended to promote resource sustainability and economic viability of the fishery.

Catch - Refers sometimes to the total amount (numbers or weight) caught, and sometimes only to the amount landed or kept. Catches that are not landed are called discards.

~~**Catchability** – A value that modifies a unit of fishing effort in the calculation of fishing~~

~~mortality which usually will depend on the habits of the fish, its abundance, and the type and deployment of fishing gear.~~

Catch Per Unit Effort (CPUE) - The catch obtained by a vessel, gear or fisherman per unit of fishing effort (e.g., number of fish caught per hour of trawling).

CCE - California Current Ecosystem

CCIEA - California Current Integrated Ecosystem Assessment

CCR - California Code of Regulations.

CDFG - California Department of Fish and Game.

CDFW - California Department of Fish and Wildlife

CEQA - California Environmental Quality Act.

Cohort - A group of fish spawned during a given period, usually within a year. See also: **age class**.

Commission - California Department of Fish and Game Commission.

~~**Compensatory Mechanism**—A process by which the effect of one factor on a population tends to be compensated for by a change in another factor. For example, a reduction in the egg production (spawning) may be compensated for by an increase in the survival rate of eggs.~~

Competition - Active demand between organisms for a common resource that is in limited supply (e.g., food, space).

CPFV - Commercial Passenger Fishing Vessel.

CPS - Coastal pelagic species (northern anchovy, jack mackerel, Pacific mackerel, Pacific sardine, and market squid).

CWPA - California Wetfish Producers Association

D

~~**Density Dependence**—When the density of a population of organisms directly affects other processes, which can then affect the abundance of that population. For example, a reduction in the numbers of a population might lead to increased growth per individual (because of earlier maturity).~~

Department - California Department of Fish and ~~Game~~Wildlife.-

Depressed - With regard to a marine fishery, the condition of a fishery for which best available scientific and other relevant information indicates a declining population trend has occurred over a period of time appropriate to that fishery. With regard to fisheries for which management is based on maximum sustainable yield, or in which a natural mortality rate is available, "depressed" means the condition of a fishery that exhibits declining fish population abundance levels below those consistent with maximum sustainable yield.

~~**Direct Enumeration**—The counting of individuals in a population through direct visual observations, or through the use of such aids as sonar or video. Typically involves estimating species density along sampling transects, and applying the result to an entire survey area in order to estimate abundance. These methods have only limited value for the marine resource manager. Their usefulness has generally been limited to enclosed (freshwater) or anadromous (e.g., salmon) resources, where direct observations and subsequent counts can result in estimates of abundance.~~

Discards - Fish that are taken in a fishery but are not retained because they are of an undesirable species, size, sex, or quality, or because they are required by law to be released.

DML - Dorsal Mantle Length

Drum seine - Like a purse seine, but a large drum stores, deploys, and retrieves the net.

E

Ecosystem - The relationships between the sum total biological and non-biological factors present in the area.

EEZ - Exclusive economic zone; consists of ocean waters from the edge of State waters three miles (5 km) to 200 miles (322 km) offshore.

Effort - The amount of time and fishing power used to harvest fish. Fishing power includes gear size, boat size, and horsepower.

EFH - Essential Fish Habitat

EFP - Experimental Fishery Permit

Egg and Larval Surveys - Involves the collection of larvae, usually with a tow net, within a predefined geographic area. These surveys are typically carried

out in conjunction with other studies in order to determine fishery information such as abundance and recruitment. They can also be used to define the geographic extent and peak time of spawning activity.

Egg Production Method – ~~While this method is very expensive, it can provide a real-time, fishery independent estimate of spawning biomass, that is directly calculated from population reproductive values that are measured by extensive at-sea sampling of eggs and adults on the spawning grounds.~~

Egg Escapement Method - A management tool which may be used to determine whether the fleet is fishing above or below a predetermined sustainable level of exploitation. The method requires establishing a threshold value to ensure that an adequate number of eggs are deposited prior to harvest.

EIR - Environmental Impact Report.

El Niño - An El Niño event occurs when the sea surface temperatures in the eastern equatorial Pacific region along the coasts of Peru and Ecuador increase significantly above the average temperature for three or more months. A La Niña is characterized by unusually cold ocean temperatures in the equatorial Pacific. Currently, El Niños have a return period of four to five years. An El Niño Southern Oscillation (ENSO) describes the full range of the Southern Oscillation that includes both warming and cooling of sea surface temperatures when compared to a long-term average. The ENSO has two parts: the El Niño is the oceanic component and the Southern Oscillation is the atmospheric component of the phenomenon.

Empirical Dynamic Model (EDM) - Captures nonlinear dynamics and system drivers that haven't been measured by including lags (i.e., previous measurements of the same data stream at different time steps). EDMs can be used to make predictions based on patterns in long-term data such as environmental drivers and are unbiased by predetermined model equations. EDMs can work particularly well for short-lived species. Capability to forecast landings, tease out complex spatial and temporal dynamics, and highlight survey information of greatest value.

Endangered Species - A native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

ENSO - El Niño Southern Oscillation. See El Niño.

~~**Equilibrium Yield** - The yield in weight taken from a fish stock when it is in equilibrium with fishing at a given intensity and its abundance is not changing from year to year. Also called **sustainable yield**.~~

Escapement - That part of the stock which survives at the end of a fishing period (e.g., season, year).

ESR - Enhanced Status Report

Essential Fishery Information - Information about fish life history and habitat requirements; the status and trends of fish populations, fishing effort, and catch levels; fishery effects on fish age structure and on other living marine resources and users; and any other information related to the biology of a fish species or to taking in the fishery that is necessary to permit fisheries to be managed according to the requirements of §7060 FGC.

Ex-vessel - Refers to activities that occur when a commercial fishing boat lands or unloads a catch. For example, the price received by a captain for the catch is an ex-vessel price.

F

Fecundity - The production of eggs per individual or per unit weight of an individual.

FGC - Fish and Game Code.

Fishery- Both of the following:

- (a) ~~—(a)~~ One or more populations of marine fish or marine plants that may be treated as a unit for purposes of conservation and management and that are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics.
- (b) ~~—(b)~~ Fishing for, harvesting, or catching the populations described in (a).

Fishing Effort - The amount of effort expended by a gear or person which is usually standardized (e.g., number of net hauls per unit of time per size of net) and summed before being used as an index of total effort. Also see **Effort**.

Fishing Mortality (F) - A measurement of the rate of removal of fish from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year.

Instantaneous is that percentage of fish dying at any one time. The acceptable rates of fishing mortality may vary from species to species.

Fishing year or fishing season - The period April 1 through March 31 under the Market Squid FMP

Fishery Control Rules - Specific management strategies such as seasonal catch limits, daily trip limits, area closures, time closures, and sustainable levels of egg escapement which provide for a sustainable market squid fishery.-

FMP - Fishery Management Plan.

G

~~**Growth Overfishing**—A reduction in the proportion of fish caught that is not compensated for by a corresponding increase in their average size. This is more likely to occur when a fishery is taking too many younger individuals.~~

Forage - the role of market squid in the food chain as a critical source of food for higher predators, including birds, fish and marine mammals.

G

Growth Rate - Usually refers to the average growth of individuals, in length or weight by successive ages over the life span of the particular species.

GT - Gross Tonnage

H

Habitat - The physical, chemical, and biological features of the environment where an organism lives.

Habitat Enhancement – The improvement of habitat, typically for the benefit of a select number of species which depend on that habitat. Wetlands restoration, artificial reefs, and kelp reforestation are examples of habitat enhancement.

Hook and Line - Includes trolling, jigging, and longline gear types.

I

Incidental Catch - See **Bycatch Incidentally-Taken Species** - See **Bycatch**

Indices of Abundance - These measures usually do not translate to an estimate of actual biomass of a population, and are usually collected over time (years) to reflect trends in a population. The indices can be compiled from a number of sources, usually reported annually (e.g., CPUE, aerial spotter, and acoustic, egg, larval, or adult research survey data). Indices of abundance, because of their simplicity, are seriously evaluated regarding the assumptions in their calculation. When they can be closely matched to more direct and precise estimates of abundance, they can be cost-effective tools of tracking the trends of a population.

J K L

Lampara net – A round haul net with the sections of netting made and joined to create bagging. The net is pushed beneath squid to encircle it from each side. The “wings” of the net are pulled back to the boat and the squid end up in the bag portion of the net. This gear has no arrangement for pursing.

La Niña - A La Niña is characterized by unusually cold ocean temperatures in the equatorial Pacific. See El Niño.

Landings - The number or weights of fish unloaded at a dock by commercial fishermen or brought to shore by recreational fishermen for personal use. Landings are reported at the points at which fish are brought to shore. Note that landings, catch, and harvest define different things.

Light boat - a vessel engaged in the commercial taking or attempting to take market squid which uses bright lights to aggregate squid for commercial purposes including live bait.

Limited Entry - Restriction of the right to participate in a fishery, by the use of permits or other means.

Living Marine Resources - Includes all wild mammals, birds, reptiles, fish, and plants that normally occur in or are associated with salt water, and the marine habitats upon which these animals and plants depend for their continued viability.

M

Marine Mammals - Animals that live in marine waters and breathe air directly. Females give live birth and can produce milk. Includes porpoises, whales, and seals.

Maximum Sustainable Yield - In a marine fishery, it means the highest average yield over time that does not result in a continuing reduction in stock abundance, taking into account fluctuations in abundance and environmental variability.

Mesh Size - The size of openings in a fishing net. Minimum mesh sizes are often prescribed in an attempt to avoid the capture of young fish before they reach their optimal size for capture.

MLDS – California Department of Fish and Wildlife's Marine Landings Database System, used to manage all commercial fishing landings information.

MLMA - Marine Life Management Act.

MLPA - Marine Life Protection Act

MPA - Marine Protected Area

Mortality (Total) - The sum total of individual deaths within a population. Usually ~~it is~~ stated as an annual rate and calculated as the sum of deaths due to natural causes (e.g., predation, disease), fishing mortality (deaths due to fishing and natural mortality), and ~~nonfishing~~non-fishing, artificial causes (e.g., pollution, seismic surveys).

MSFCMA - Magnuson-Stevens Fishery Conservation and Management Act.

MSFMP – Market Squid Fisheries Management Plan.

N

NOAA - National Oceanic and Atmospheric Administration

NOP - Notice of Preparation.

NMFS - National Marine Fisheries Service or NOAA Fisheries.

O

~~**Optimal Sustainable Yield** – A sustainable yield that takes into account biological,~~

~~social, and political values, and the effect of harvesting on dependent or associated species, in an attempt to produce the maximum benefit to society from a stock of fish.~~

Optimum Yield - With regard to a marine fishery, means the amount of fish taken in a fishery that does all of the following:

- (a) ~~—(a)—~~ Provides the greatest overall benefit to the people of California, particularly with respect to food production and recreational opportunities, and takes into account the protection of marine ecosystems.
- (b) ~~—(b)—~~ Is the maximum sustainable yield of the fishery, as reduced by relevant economic, social, or ecological factors.
- (c) ~~—(c)—~~ In the case of an overfished fishery, provides for rebuilding to a level consistent with producing maximum sustainable yield in the fishery.

Overfished - With regard to a marine fishery, means both of the following:

- (a) ~~—(a)—~~ A depressed fishery.
- (b) ~~—(b)—~~ A reduction of take in the fishery is the principal means for rebuilding the population.

Overfishing - A rate or level of taking that the best available scientific information, and other relevant information that the Commission or Department possesses or receives, indicates is not sustainable or that jeopardizes the capacity of a marine fishery to produce the maximum sustainable yield on a continuing basis.

P

Paralarvae – Life stage of market squid at the time of hatching (hatchlings).

Participants - The ~~sport~~recreational fishing, commercial fishing, and fish receiving and processing sectors of the fishery.

Pelagic - Pertaining to the water column, or referring to organisms living in the water column.

~~**Performance Standard** – A qualitative and/or quantitative standard used to judge whether the performance of a particular individual, tool, or process is functioning properly. The standard used must be objective and readily detectable. In fisheries biology, a performance standard used to gauge a specific management process could be the long-term recruitment success of a particular species as measured through a standard biological survey method.~~

PFMC - Pacific Fishery Management Council.

Population (see **Stock**) - A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

Predator - A species that feeds on other species. The species being eaten is the prey.

Prey - A species being fed upon by other species. The species eating the other is the predator.

Productivity - Generally used to refer to the capacity of a stock to provide a yield.

PSMFC - Pacific States Marine Fisheries Commission.

Purse Seine - A net used to encircle aggregations of fish by closing the bottom of the net. The net is continuous, with corks along the top and leads and rib line along the bottom. Purse seines have a drawstring running the length of the ~~lead~~rib line, which is pulled tight after the set.

Q

Quota - A limit on the amount of fish which may be landed in any one fishing season or year. May apply to the total fishery or to an individual share.

R

Recreational Fishery - Harvesting fish for personal use, fun, and challenge. Recreational fishing does not permit sale of catch. Refers to and includes the fishery resources, fishermen, and businesses providing needed goods and services.

Recruit - A relatively young fish entering the exploitable stage of its life cycle.

Recruitment - Either the rate of entry of recruits into the fishery or the process by which such recruits are generated. Usually associated with attainment of a particular age or size, but can also be dependent on such factors as the fishes' appearance on a particular fishing ground, or how they grow to a size large enough to be captured by a certain mesh gear.

Relative Abundance - An estimate of biomass usually measured by indices that track trends in population biomass over time. This method is neither a direct nor usually precise estimate.

Restricted Access - A fishery in which the number of persons who may participate, the number of vessels that may be used in taking a specified

species of fish, or the catch allocated to each fishery participant is limited by statute or regulation.

Rib line – A modification to a seine net which adds additional webbing between the weighted leadline and the purse line. This causes the net to flutter or bounce when it does contact the bottom as opposed to dragging. The rib line is intended to reduce the likelihood of pursing benthic bycatch, and to reduce the impact on the sandy bottom habitat, while simultaneously strengthening the integrity of and preventing damages to the net.

Round Haul - those that employ the use of lampara, purse seine, and drum seine net gear to commercially harvest squid.

S

SAFE - Stock Assessment and Fishery Evaluation

SB - Senate Bill

Seasonal Catch Limit - an amount of allowable catch which may be taken within a designated geographic area in a fishing season, specified in short tons and excluding discard mortality. The attainment (or expected attainment) of this limit will cause closure of the directed commercial fishery as specified in regulation.

Selectivity - Refers to the selective nature of fishing gear in that almost all kinds of gear catch fish of some sizes more readily than other sizes.

SCB - Southern California Bight

SFAC - Squid Fishery Advisory Committee.

SMR - State Marine Reserve

Spawning Biomass - See Biomass

Spermatophore - A capsule or compact mass of spermatozoa extruded by the males of certain invertebrates and directly transferred to the reproductive parts of the female.

SRSC - Squid Research and Scientific Committee.

SST - Sea surface temperature

Stock - A species, subspecies, geographical grouping, or other category of fish capable of management as a unit.

~~**Survival Rate** – Number of fish alive after a specified time interval (usually a year) divided by the initial number.~~

Sustainable, Sustainable Use, and Sustainability - with regard to a marine fishery, both of the following:

- (a) ~~—(a)~~ Continuous replacement of resources, taking into account fluctuations in abundance and environmental variability.
- (b) ~~—(b)~~ Securing the fullest possible range of present and long-term economic, social, and ecological benefits; maintaining biological diversity; and, in the case of fishery management based on maximum sustainable yield, taking in a fishery that does not exceed optimum yield.

SWFSC - Southwest Fisheries Science Center

T

Threatened Species - a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts.

Total Allowable Catch (TAC) - The annual recommended catch for a species or species group. The regional council sets the TAC from the range of the Allowable Biological Catch (ABC).

Total Length - The straight-line distance from the most forward tip of the snout to the end of the tail fin, when the mouth is closed and the lobes of the tail fin are squeezed together.

~~squeezed together.~~

Trawl - A large bag net that is tapered and forms a flattened cone. The mouth of the net is kept open while it is towed or dragged over the sea bottom.

Trophic Level - Position in the food chain, determined by the number of energy- transfer steps to that level.

U

U.S. – United States of America

USC - United States Code.

V W

Weekend Closure - a routine management measure which may be used to prohibit take of market squid during certain days of a week.

X Y Z

Year Class - see Age Class.

Yield - Sometimes this term is synonymous with catch, but it more often implies a degree of sustainability over a number of years.

~~**Yield-Per-Recruit**—The expected lifetime yield per fish of a specific age. The yield is usually expressed in weight for each recruit. For a given species with a specific growth curve, and constant natural mortality, the yield-per-recruit will vary as a function of age at first capture and fishing mortality.~~

~~**Yield-Per-Recruit Model**—This model can be used to predict the yield from any given level of recruitment if just the natural mortality, present fishing mortality, and growth rates can be estimated. Furthermore, this model can be manipulated to estimate yields for any combination of natural mortality, fishing mortality, and age at first capture. This information could then allow management to adjust mesh sizes, and thus age at first capture, to provide for maximum or optimal yield per recruit regardless of population size.~~

**~~Appendix B Existing Regulations Prior to Adoption
of the MSFMP
(FGC and CCR Title 14)~~**

~~Appendix B. Existing Regulations Prior to Adoption of the MSFMP~~

~~FISH AND GAME CODE~~

~~Article 9. Salt water and Anadromous Fish Generally~~

~~§8399. Squid—restrictions.~~

~~North of Point Conception, squid may be taken the year around; however, the commission may adopt regulations specifying the days of the week and the times of the day when squid may be taken.~~

~~§8399.1. Squid taking restricted; seine skiff.~~

~~(a) In District 10, it is unlawful to engage in the following activities:~~

~~(1) Attract squid by a light displayed from any vessel, except a vessel deploying nets for the take, possession, and landing of squid or from the seine skiff of the vessel deploying nets for the take, possession, and landing of squid.~~

~~(2) Attract squid by a light displayed from any vessel whose primary purpose is not the deployment, or assisting in the deployment, of nets for the take, possession, and landing of squid.~~

~~(3) To encircle any vessel, other than by the seine skiff of a vessel deploying nets for the take, possession, and landing of squid, while that vessel is engaged in the taking of squid.~~

~~(b) For purposes of this section, "seine skiff" means a vessel that is not licensed by the federal government or registered by the Department of Motor Vehicles, that is used to assist a larger federally licensed or state-registered fishing vessel by assisting in the deployment and retrieval of nets and the landing of fish, and that travels with that larger fishing vessel at all times, that is used solely at the direction of the operator of the larger fishing vessel, and that is owned by the owner of the larger fishing vessel.~~

~~Article 9.7. Market Squid~~

~~§8420. Legislative findings~~

~~The Legislature finds and declares that the fishery for market squid (*Loligo opalescens*) is the State's largest fishery by volume, generating millions of dollars of income to the state annually from domestic and foreign sales. In addition to supporting an important commercial fishery, the market squid resource is important to the recreational fishery~~

~~and is forage for other fish taken for commercial and recreational purposes. The growing international market for squid and declining squid production from other parts of the world has resulted in an increased demand for California market squid, which, in turn has led to newer, larger, and more efficient vessels entering the fishery and increased processing capacity. The legislature finds that the lack of research on market squid and the lack of annual at-sea surveys to determine the squid could result in over fishing of the resource, damaging the resource, and financially harming those persons engaged in the taking, landing, processing, and sale of market squid. The Legislature further finds that many individuals, vessels, and processing plants engaged in the market squid fishery have no other viable alternative fisheries available to them and that a decline or a loss of the market squid resource would cause economic devastation to the individuals or corporations engaged in the market squid fishery. The Legislature declares that to prevent excessive fishing effort in the market squid fishery and to develop a plan for the sustainable harvest of market squid, it is necessary to limit the number of days of the week market squid may be taken and to develop a plan for a sustainable California market squid fishery.~~

~~§8420.5. Commercial taking of market squid.~~

~~North of a line extending due west magnetic from Point Conception, market squid may be taken for commercial purposes only between noon on Sunday and noon on Friday of each week.~~

~~§8421. Commercial market squid vessel permit.~~

~~(a) On or after April 1, 1998, no person shall use a vessel to take or land market squid with dip nets (commonly referred to as scoop nets), purse seine nets, or lampara nets for commercial purposes unless the owner of that vessel has been issued a commercial market squid vessel permit by the department that has not been suspended or revoked.~~

~~(b) A commercial market squid vessel permit shall be issued only for vessels employing dip, purse seine, or lampara nets for the taking of market squid for commercial purposes. No permit is required for any vessel taking or landing market squid for commercial purposes if the amount taken by the vessel does not exceed two tons landed in a calendar day or if the squid taken is used for live bait only. No other nets shall be used for the taking of market squid from a vessel for commercial purposes. Furthermore, it is unlawful to possess in excess of two tons of incidentally taken squid per trip.~~

~~(c) A commercial market squid vessel permit shall be issued to a person only if that person is the owner of record of the commercial fishing vessel for which the permit is issued and the vessel is registered with the department pursuant to Section 7881.~~

~~(d) A commercial market squid vessel permit shall be issued only to the person who~~

~~owns the vessel at the time of application for that permit. For purposes of this subdivision, an owner includes any person who has a lease-purchase agreement for the purchase of a vessel.~~

~~(e) No person who is issued a commercial market squid vessel permit shall sell, trade, or transfer the permit to another person.~~

~~(f) A commercial market squid vessel permit shall be issued annually, commencing with permit for the 1998-99 permit year.~~

~~(g) A violation of the section does not constitute a misdemeanor; however, pursuant to Section 7857, the commission may revoke or suspend the commercial market squid vessel permit or commercial fishing license held by any person who violates this section.~~

~~(h) Squid landed in excess of the limit specified in subdivision (b) of Section 8421 without a permit shall be forfeited to the department by the signing of an official release of property form. The squid shall be sold or disposed of in a manner to be determined by the department. The proceeds from all sales shall be paid into the Fish and Game Preservation Fund.~~

~~§8421.5. Permit holder of partnership or corporation.~~

~~If a commercial market squid vessel permit is issued for a vessel that is owned by a bonafide partnership or corporation, that partnership or corporation shall designate the individual who is the operator and shall provide that information to the department annually at the time of issuing the permit. If there is a dissolution of the partnership or the corporation, the partnership or corporation shall notify the department of the name of the partner or shareholder who is the successor permit holder and the department shall reissue the permit to that partner or shareholder.~~

~~§8422. Fees for permit; renewal.~~

~~(a) The fee for a commercial market squid vessel permit shall be four hundred dollars (\$400).~~

~~(b) All applications for a commercial market squid vessel permit for the 1998-99 permit year shall be received by the department on or before April 30, 1998, or, if mailed, shall be postmarked by April 30, 1998. In order to renew a permit, an applicant shall have been issued a commercial market squid vessel permit in the immediately preceding year. Applications for renewal of the permit shall be received by the department on or before April 30 of each year, or, if mailed, shall be postmarked by April 30 of each year.~~

~~(c) Notwithstanding Section 7852.2, a penalty of two hundred fifty dollars (\$250) shall~~

~~be paid in addition to the fee required under subdivision (a) for applications that do not meet the deadline specified in subdivision (b) but that are received by the department on or before May 31 of any year.~~

~~(d) The department shall deny all applications received after May 31 of each year, and the application shall be returned to the applicant who may appeal the denial to the commission. If the commission issues a permit following an appeal, it shall assess the late penalty prescribed by subdivision (c).~~

~~§8423. Commercial squid light boat owner's permit.~~

~~(a) No person shall operate a squid light boat unless the owner of the boat has been issued a commercial squid light boat owner's permit by the department and a permit number is affixed to the boat in the manner prescribed by the department.~~

~~(b) The department shall issue a commercial squid light boat owner's permit to a person who submits an application, pays the permit fee, and meets the other requirements of this section.~~

~~(c) The department may regulate the use of squid light boats consistent with the regulations established for commercial squid vessels.~~

~~(d) The fee for a commercial squid light boat owner's permit shall be four hundred dollars (\$400).~~

~~(e) It is unlawful for a person to engage in the following activities, unless the vessel used for the activity has been issued a commercial market squid vessel permit or the person holds a commercial squid light boat owner's permit:~~

~~(1) Attracting squid by light displayed from a vessel, except from a vessel deploying nets for the take, possession, and landing of squid or except from the seine skiff of the vessel deploying nets for the take, possession, and landing of squid.~~

~~(2) Attracting squid by light displayed from a vessel whose primary purpose is other than deployment, or assistance in the deployment, of nets for the take, possession, and landing of squid.~~

~~(f) A commercial squid light boat owner's permit shall be issued to a person who is the owner of record of a vessel that is registered with the department pursuant to Section 7881. For purposes of this subdivision, an owner includes any person who has a lease-purchase agreement for the purchase of a vessel.~~

~~§8423.5 Fees for permit; renewal.~~

~~(a) All applications for a commercial squid light boat owner's permit for the 1998 permit year shall be received by the department on or before April 30, 1998, or, if~~

~~mailed, shall be postmarked by April 30, 1998. In order to renew a permit, an applicant shall have been issued a commercial squid light boat owner's permit in the immediately preceding year. Applications for renewal of the permit shall be received by the department on or before April 30 of each year, or, if mailed shall be postmarked by April 30 of each year.~~

~~(b) Notwithstanding Section 7852.2, a penalty of two hundred fifty dollars (\$250) shall be paid in addition to the fee required under subdivision (a) for applications that do not meet the deadline specified in subdivision (b) but that are received by the department on or before May 31 of any year.~~

~~(c) The department shall deny all applications received after May 31 of each year, and the application shall be returned to the applicant who may appeal the denial to the commission. If the commission issues a license following an appeal, it shall assess the late penalty prescribed by subdivision (b).~~

~~§8424. Purchase of squid from vessel.~~

~~(a) No person shall purchase squid from a vessel or vessels unless that person holds a license issued pursuant to Section 8032 or 8033, employs a certified weigh master, and the facilities operated by the person are located on a permanent, fixed location.~~

~~(b) Notwithstanding any other provision of law, this section shall not apply to the transfer at sea of squid for live bait in an amount less than 200 pounds in a calendar day.~~

~~§8425. Annual squid management regulations.~~

~~On or after April 1, 1998, and annually thereafter, the commission, upon the recommendation of the director, after a public hearing at which findings are adopted, shall adopt regulations to protect the squid resource and manage the squid fishery at a sustainable level, taking into account the level of fishing effort and ecological factors, including but not limited to, the species' role in the marine ecosystem and oceanic conditions.~~

~~§8426. Fishery status report; recommendations for market squid conservation and management plan.~~

~~(a) The director shall be responsible for the development of research protocols and the development of recommendations for the management of the squid fishery as set forth in subdivision (c) and for the conduct of public hearings to receive information on the resource and the fishery. The director may establish a Squid Research Scientific Committee consisting of persons with scientific knowledge or expertise on the squid resource or fishery, who may be employed by academic institutions, public or private research institutions, or the private sector. The committee, if established, shall assist in~~

~~the development of research protocols and the preparation and review of the market squid conservation and management plan as described in subdivision (c). The department shall pay, from revenues derived pursuant to this article, the necessary costs of the committee, including a per diem to all members, as determined by the department.~~

~~(b) The director may establish a Squid Fishery Advisory Committee consisting of members representing licensed squid fishermen, squid processor, the recreational fishing industry, squid light boat owners, marine conservation organizations, and the Sea Grant Marine Advisory Program.~~

~~(c) The director shall hold public hearings to take testimony on interim measures, squid research needs, and the development of the management recommendations to be included in the report to the Legislature. Notwithstanding Section 7550.5 of the Government Code, on or before April 1, 2001, in consultation with the Squid Fishery Advisory Committee, if established, and following public hearings, the director shall submit to the Legislature a report on the status of the market squid fishery with recommendations for a market squid conservation and management plan, including, but not limited to, the following information:~~

~~(1) Whether a limited access plan to manage the amount of fishing effort in the market squid fishery is necessary and, if so, what criteria should be used to determine who may participate in the fishery, what the optimum number of vessels should be in the fishery, and the overall fleet capacity.~~

~~(2) Whether it is necessary or advisable to reduce the number of days of the week that market squid may be taken for commercial purposes in specified areas of the state to protect the squid resource.~~

~~(3) Whether there are areas, if any, that should be declared harvest replenishment areas for squid where the taking of squid would not be permitted.~~

~~(4) A research and monitoring program of the market squid resource as may be needed to assist in the management of the market squid fishery to assure sustainable harvest on an annual basis and funding for that program.~~

~~(5) The regulation of squid light boats.~~

~~(6) Coordination that may be necessary with a federal coastal pelagic species management plan, should one be adopted.~~

~~(7) Whether it is necessary or advisable to modify the method of take or the use of fishing gear.~~

~~§8427. Transfer of permit to replacement vessel.~~

~~(a) A commercial market squid vessel permit issued pursuant to Section 8422 or a commercial squid light boat owner's permit issued pursuant to Section 8423 may be transferred to another vessel owned by the permit holder, if the vessel is of comparable capacity as determined by United States Coast Guard documentation papers, and only if the permitted vessel was lost, stolen, destroyed, or suffered a major mechanical breakdown.~~

~~(b) The department shall not issue a permit for a replacement vessel if the permitted vessel was reported as lost, stolen, destroyed, or damaged for fraudulent purposes.~~

~~(c) Only the permit holder at the time of the loss, theft, destruction, or mechanical breakdown of the vessel may apply for the transfer of the vessel permit. Proof that a vessel is lost, stolen, or destroyed shall be in the form of a copy of the report filed with the United States Coast Guard or any other law enforcement agency or fire department investigating the loss.~~

~~(d) The vessel owner shall submit an application for the transfer to the department on a form provided by the department and shall pay a non-refundable transfer fee of two hundred fifty dollars (\$250) for each transfer of a market squid vessel permit or a commercial squid light boat owner's permit.~~

~~(e) The permit for the permitted vessel shall be current, and the owner of the permitted vessel shall make assurances in the transfer application that any renewal of the permit which becomes due during the application processing period will be made.~~

~~(f) The owner of the permitted vessel shall submit evidence with the transfer application sufficient to establish that he or she is the owner of the permitted vessel and the owner of the replacement vessel at the time of the application for transfer.~~

~~(g) The vessel owner shall sign the transfer application under penalty of perjury and shall certify that the information included in the application is true to the best of his or her knowledge and belief.~~

~~§8428. Use of funds.~~

~~An amount not to exceed the sum collected annually from permit fees paid pursuant to Sections 8422 and 8423 may be used for the purposes of this article, including any research that may be necessary for the development of recommendations from the Legislature.~~

~~§8429. Material false statements-penalties.~~

~~Any statement made to the department, orally or in writing, relating to a permit issued under this article, shall be made under penalty of perjury. The commission shall revoke the commercial fishing license, the commercial boat registration of any vessel, and, if~~

~~applicable, any licenses issued pursuant to Section 8032, 8033, or 8034 that are held by any person submitting material false statements, as determined by the commission, for the purpose of obtaining a commercial market squid vessel permit.~~

~~§8429.5. Authority of director and commission.~~

~~Notwithstanding any other provision of law, nothing in this article shall prohibit or otherwise limit the authority of the director or the commission under any other law.~~

~~§8429.7. Repeal of article~~

~~Sections 8420.5 to 8423.5, inclusive, and Sections 8426 and 8427 shall become inoperative upon the adoption by the commission of a market squid fishery management plan and the adoption of implementing regulations pursuant to Section 8425, and are repealed six months thereafter.~~

-

~~CALIFORNIA CODE OF REGULATIONS~~

~~149. Commercial Taking of Market Squid.~~

~~(a) Fishing days. North of a westerly extension of the United States—Republic of Mexico boundary line, market squid may not be taken for commercial purposes between 1200 hours (noon) on Friday and 1200 hours (noon) on Sunday of each week. This regulation applies to vessels catching squid or attracting squid with lights for the purpose of catching. This regulation does not apply to vessels pursuing squid for live-bait purposes only.~~

~~(b) Records. Pursuant to Section 190 of these regulations, any person who possesses a valid market squid vessel permit or squid light boat owners permit shall complete and submit an accurate record of his/her squid fishing/lighting activities on a form [Market Squid Vessel Logbook—DFG 149a (4/99), or Market Squid Light Boat Logbook—DFG 149b (4/99), which are incorporated by reference herein] provided by the department, as appropriate to the type of fishing activity.~~

~~(c) Maximum Wattage. Each vessel fishing for squid or lighting for squid will utilize a total of no more than 30,000 watts of lights to attract squid at any time.~~

~~(d) Light Shields. Each vessel fishing for squid or lighting for squid will reduce the light scatter of its fishing operations by shielding the entire filament of each light used to attract squid and orienting the illumination directly downward, or providing for the illumination to be completely below the surface of the water.~~

~~(e) Seasonal Harvest Guideline. For the period from April 1 through March 31 of the following year, a total of not more than 125,000 short tons of market squid may be taken by vessels permitted under Section 8421 of the Fish and Game Code, with the fishery closure implemented as follows:~~

~~(1) The department shall estimate, from the current trend in landings, when the market squid harvest guideline will be reached, and will publicly announce the effective date of closure of the directed fishery on VHF/channel 16 between the hours of 10:00 p.m. and 12:00 a.m. (midnight). It shall be the responsibility of all operators of permitted market squid vessels to monitor VHF/channel 16 to determine when the harvest guideline is expected to be reached and the fishery closed. Any announcement issued or made by the department on VHF/channel 16 shall constitute official notice.~~

~~(2) Whenever the market squid harvest guideline has been reached, market squid may be taken for commercial purposes until April 1 only pursuant to Section 8421(b) of the Fish and Game Code.~~



 [Portal Home](#)

 [Overview](#)

 [Resources](#)

Species-at-a-Glance

Scientific Name

Doryteuthis (Loligo)
opalescens



Range

Market squid range from Baja California, Mexico to southeastern Alaska.

Habitat

Market squid inhabit inshore and offshore pelagic waters of the California Current Ecosystem but are also associated with bottom substrate during spawning events and egg development.

Size (length and weight)

Market squid are fast-growing. They are less than 3 millimeters at hatching and grow to an average mantle length of 152 millimeters at the time of spawning, approximately 6 months later. Individual growth rates vary.

Life Span

Market squid are short-lived with life spans of approximately 6-10 months.

Reproduction

Market squid are terminal spawners, and deacease after reproducing. Spawning occurs year-round.

Prey

As larvae and juveniles, market squid consume copepods and euphausiids. As adults, they feed on fish, polychaete worms, squid (cannibalism), and crustaceans.

Predators

Market squid are forage for many fish and marine mammal predators in the California Current Ecosystem.

Fishery

Market squid primarily support a commercial fishery. In the 2023 calendar year, more than 52 million pounds of market squid were landed in California, generating roughly \$33 million in revenue. The median ex-vessel price of market squid increased from \$0.10 to \$0.50 per pound since 2000 and remained at \$0.50 per pound from 2016 to 2018. In 2020, the median ex-vessel price increased to \$0.60 per pound and has remained at \$0.60 per pound into July of 2024. Landing, processing, and distribution mostly occur in Monterey Bay, Ventura, and Los Angeles port areas.

Area Fished

The market squid fishery is centered in the nearshore waters of California, typically over sandy bottom habitats. In California, commercial effort is concentrated in central California around Monterey Bay and in southern California including the Channel Islands.

Fishing season

In California, the regulatory fishing season for market squid is year-round April 1 through March 31.

Fishing gear

Purse seine, drum seine, lampara, and brail gear are used in the market squid fishery.

Market(s)

Market squid are primarily exported with minimal domestic retention for processing. They also are used as bait or for consumption. Market Squid are typically shipped frozen to China, Japan, and Europe for processing prior to sale and exported to international markets from there.

Current Stock Status

No current estimates of population abundance in California exist for market squid. Recruitment varies substantially from year to year in response to environmental factors, causing natural fluctuations in abundance. Given the short lifespan of this species and based on estimates of reproductive output the status of the stock appears productive.

Management

Since 2005 the market squid fishery has been principally state-managed through the Market Squid Fishery Management Plan. Market squid is also included in the federal Coastal Pelagic Species Fishery Management Plan. From 2023-2024, a new Squid Fishery Advisory Committee (SFAC) reviewed California market squid fishery management and advised the California Department of Fish and Wildlife on potential management changes (CDFW 2024b). Recommendations on management changes from the SFAC will be provided to the California Fish and Game Commission in 2024-2025.

[The Species →](#)

 Related Links

[California Market Squid Fishery Management Plan](#)
[California Department of Fish and Wildlife Pelagic Fisheries and Ecosystem Program](#)
[Marine Fisheries Data Explorer](#)
[California Department of Fish and Wildlife License Statistics](#)
[California Wetfish Producers Association](#)
[California Cooperative Oceanic Fisheries Investigations](#)
[California Current Integrated Ecosystem Assessment](#)
[National Oceanic and Atmospheric Administration List of Fisheries](#)

Last Updated: The Market Squid Enhanced Status Report was updated in 2024.

Contact Us: To contact CDFW regarding Market Squid, please [email CDFW's Marine Region](#) or call 831-649-2870.

Citation: California Department of Fish and Wildlife. 2024 Market Squid, *Doryteuthis (Loligo) opalescens*, Enhanced Status Report.

Contributor(s): Katie Grady, Sarah Valencia, Dianna Porzio

Acknowledgement(s):

Market Squid Enhanced Status Report 2024

Table of Contents	▶
List of Acronyms	▶
List of Figures	▶

List of Tables	▶
Literature Cited	▶

California Department of Fish and Wildlife
Marine Region (Region 7)

Regional Manager: Dr. Craig Shuman
Main Office: 20 Lower Ragsdale Drive, Suite 100, Monterey, CA 93940
AskMarine@wildlife.ca.gov | (831) 649-2870
[Office Locations](#)| [Marine Blog](#)| [Subscribe](#)

Back to Top



Copyright © 2025 State of California

1.5. Effects of Changing Oceanic Conditions

[Collapse All](#)

1. The Species

1.1. Natural History

1.1.1. Species Description

Market squid (*Doryteuthis (Loligo) opalescens*) or opalescent squid (Figure 1-1), are part of the class Cephalopoda and the phylum Mollusca (Berry 1911). There are approximately 750 recognized species of squids alive today and more than 10,000 fossil forms of cephalopods. Market squid belong to the family Loliginidae. These squid generally have a mixed, iridescent (opalescent) coloration of milky white and purple; however, color changes can occur rapidly. Similar to most squid species, market squid possess an ink sac that serves as a defense mechanism by expelling ink to confound predators. Squid have eight arms and two longer feeding tentacles. Squid have large, well-developed eyes and strong parrot-like beaks. Males are larger and more robust than females. Market squid are terminal spawners; spawning occurs at the end of their life span (6 to 10 months after hatching) (Butler et al. 2001).

At the Cephalopod International Advisory Council Symposium in Phuket, Thailand in February 2003, a consensus was reached that based on morphology and molecular evidence, the scientific name for market squid should be changed from *Loligo opalescens* to *Doryteuthis (Amerigo) opalescens* (Anderson 2000, Vecchione et al. 2005). This name change however was not formalized or published (CDFG 2005). The Department currently refers to *Loligo opalescens* as market squid in regulation (Fish and Game Code (FGC) §8420, §8045) and as market squid or *Loligo opalescens* throughout the Market Squid Fishery Management Plan (MSFMP, CDFW 2005).



Figure 1-1. Market squid (Photo Credit: Dane McDermott, CDFW).

1.1.2. Range, Distribution, and Movement

Market squid range from the southern tip of Baja California, Mexico to southeastern Alaska (Figure 1-2). Juveniles and adults range throughout the California and Alaska Current systems (Jereb et al. 2010). In California, market squid typically spawn in shallow, nearshore areas, and are generally found in central California in summer months, and southern California in winter months (Hardwick and Spratt 1979).

Ocean currents disperse newly hatched market squid (called paralarvae) (Figure 1-3) off egg bed areas. Paralarvae are found most commonly 1.0 to 3.0 kilometers (km) (0.6 to 1.9 miles (mi)) from shore, concentrated in areas where water masses converge (Okutani and McGowan 1969; Zeidberg and Hamner 2002). Their distribution is patchy, yet if squid are found at one site, it is likely that additional squid will be found in close proximity (contagious distribution). They are found at depths of 30 meters (m) (98 feet (ft)) by day and 15 m (49 ft) at night, suggesting diel movement (Zeidberg and Hamner 2002).

Juvenile squid begin to school at a Dorsal Mantle Length (DML) of 15.0 millimeters (mm) (0.6 inches (in)) (Yang et al. 1983, 1986) or 2.5 months of age (based on the growth curve presented in Butler et al. 2001) and occur on the continental shelf just off the bottom by day and throughout the water column at night (Zeidberg et al. 2004). As market squid reach 55.0 mm (2.2 in) DML they move off the continental slope (Zeidberg et al. 2004). They are found at depths of up to 600 m (1,969 ft) during the day, but move vertically to the upper 100 m (328 ft) of the water column at night to feed (Hunt et al. 2000; Zeidberg and Hamner 2002). Market squid use their fins for swimming in much the same way fish do and their funnel for extremely rapid "jet" propulsion forward or backward. This allows them to migrate long distances from offshore pelagic waters to nearshore areas and form dense aggregations for spawning at an age of 6 to 10 months (Butler et al. 2001).

The number of different stocks or subpopulations of market squid along the entire Pacific Coast is unknown at this time and genetic studies have drawn differing conclusions. Results from Cheng et al. (2020) provide preliminary support to the existence of smaller genetically distinct cohorts that continually spawn in California, as opposed to the prevailing notion that spawning occurs in two asynchronous peaks in the central California and southern California regions. A cohort is defined as a group of squid spawned during the same period. Both Gilly (2003) and Reichow and Smith (2001) concluded that spawning populations that are commercially harvested from the Channel Islands are not genetically distinguishable from those landed in Monterey Bay. While Gilly et al. (2001) found slight but significant genetic differences between samples taken from central California and southern California, no temporal or spatial genetic differences for market squid within the southern California Bight (SCB) and no temporal differences between samples in the Monterey areas were evident.

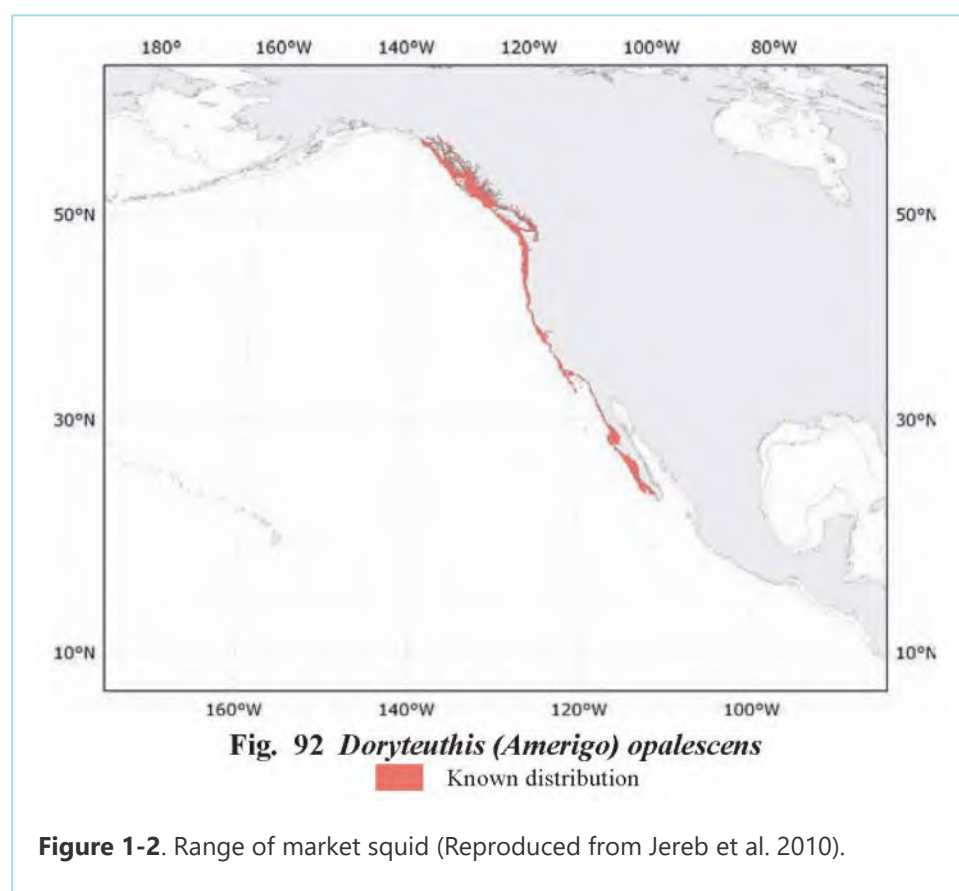




Figure 1-3. Market squid paralarvae (Photo Credit: Sonia Torres, CDFW).

1.1.3. Reproduction, Fecundity, and Spawning Season ▼

Relatively little is known about the life history of spawning market squid. Generally, in central California, spawning activity starts around April and ends in October. In southern California, spawning tends to begin around October and ends in April or May. The seasonality of spawning between central and southern California is attributable to ocean bottom temperatures rather than any biological difference (Zeidberg et al. 2011b). During some years, reproductive activity and landings may occur throughout most of the year along the coast. Year-round spawning in several areas statewide at different times of the year likely reduces the effects of poor local conditions on survival of eggs or hatchlings and indicates that stock abundance is not solely dependent on availability of squid from a single spawning area. Spawning typically occurs at night but has been observed during daylight hours (Forsythe et al. 2004).

Squid are terminal spawners, but females can spawn multiple times within a spawning period and may not die immediately after a single spawning event, as was previously believed (Hanlon et al. 2004).

Market squid aggregate to spawn, usually over sandy habitats where they deposit extensive egg masses. Mating takes place on spawning grounds but may also occur before squid move to their spawning sites. Gametes are exchanged directly, with male squid placing spermatophores into the mantle cavity of females and eggs are fertilized as they are extruded (Hurley 1977). Zeidberg et al. (2004) observed market squid mating in groups of 1 to 2 males per female and small males appeared to insert spermatophores into the mantles of females that were being held in a mating embrace by larger males. These interactions are termed "sneaker mating."

Off California, a female squid produces approximately 20 egg capsules, with each capsule containing about 200 individual eggs that are suspended in a gelatinous matrix (Recksiek and Frey 1978). The number of egg cases deposited and the number of eggs within egg cases vary by locale and decline throughout the spawning season. Females attach each egg capsule individually to the bottom substrate. As spawning continues, mounds of egg capsules covering more than 100 square meters (m²) may be formed and appear to carpet the sandy substrate.

After fertilization, embryonic development of egg cases in aquaria at 16.0 degree, Celsius (°C) (60.8 degree, Fahrenheit (°F)) usually takes between 3 to 4 weeks, with hatching occurring on day 22 or 23 (Fields 1965). Hatching continues for about a week with numerous individuals appearing, but in decreasing volume. In cooler conditions the development time is probably at least a week longer and in warmer waters the longfin inshore squid (*Doryteithis pealeii*) emerges after only 11 to 12 days of incubation (Fields 1965). While the embryo develops, considerable change takes place in the protective capsule. The capsules continue to take on water and when hatching begins, the volume and weight of each capsule reaches about five times its original value. When a juvenile squid is ready to hatch it makes an opening large enough to escape using strong mantle contractions and then becomes free-swimming. Based on laboratory observations, it is theorized that most of the juveniles emerge during the first several hours of darkness and with upward swimming and tidal drift, they are able to clear the egg beds and spawning grounds before light (Fields 1965).

Macewicz et al. (2001, 2004) found that female squid have a fixed reproductive output and die before developing and spawning all possible eggs in their ovaries. The fecundity-size relationship was found to be linear, and the potential fecundity is calculated as 29.8 multiplied by the DML (in mm) (Macewicz et al. 2004). For an average female with a DML of 129.0 mm (5.1 in), the potential fecundity is 3,844 eggs. Dorval et al. (2013) found that this linear model did not account for a substantial amount of the total variation in potential fecundity and proposed using mean potential fecundity.

Market squid egg hatching rate is determined by temperature, with incubation time ranging from 22 to 90 days at temperatures ranging from 42.0 to 68.0 °F (5.6 to 20.0 °C) (Isaac et al. 2001). Eggs are commonly deposited in areas with water temperatures between 50 and 58 °F (10.0 to 14.4 °C), resulting in incubation periods lasting from 34 to 52 days.

1.1.4. Natural Mortality

Determining the natural mortality (M) of marine species is important for understanding the health and productivity of their stocks. Natural mortality results from all causes of death not attributable to fishing such as age, disease, predation, or environmental stress. Natural mortality is generally expressed as a rate that indicates the percentage of the population dying in a year. Fish with high natural mortality rates must replace themselves more often and thus tend to be more productive. Natural mortality along with fishing mortality (F) result in the total mortality operating on the fish stock.

Based on their short life span of 6-10 months, market squid appear to exhibit a very high natural mortality rate (Macewicz et al. 2004) and the adult population is composed of almost entirely new recruits. These observations suggest that the entire stock is replaced annually, even in the absence of fishing. Natural mortality is attributed in part to heavy predation, as market squid are prey for a variety of fish and marine mammal predators in the California Current Ecosystem (CCE) (Figure 1-3). However, market squid also die shortly after spawning occurs, and it is thought that their fast growth and high metabolic rates contribute to these high natural mortality rates (O’Dor and Webber 1986).

While there are no studies directly estimating the natural mortality rate of squid, the total mortality has been estimated to range from 0.3 to 0.6 per month based on squid ageing data (Maxwell et al. 2005; Butler et al. 2001)

1.1.5. Individual Growth

Individual growth of marine species can be quite variable, not only among different groups of species but also within the same species. Growth is often very rapid in young fish and invertebrates but slows as adults approach their maximum size. The von Bertalanffy Growth Model is most often used in fisheries management, but other growth functions may also be appropriate.

Market squid are less than 3.0 mm (0.1 in) at hatching and grow to an average mantle length of 152 mm (10 in) at the time of spawning. Butler et al.(2001) found that market squid growth increases with age and is best described with an exponential function (Figure 1-4):

$$DML = 0.001342 * Age^{2.132}$$

where DML is in millimeters and age is in days ($r^2 = 0.95$, $df = 275$, $P < 0.001$). Paralarvae growth is slow (0.05 (0.002 in) mm DML per day) during the first month but increases dramatically as squid mature. Growth may vary based on location and environmental conditions (Jackson 1994; Butler et al. 1999), with lower growth observed in years with warmer water conditions, likely due to a reduction in food availability (Jackson and Domeier 2003).

Macewicz et al. (2004) fit an exponential function to describe the weight-length relationship for female squid (Figure 1-5). Because the body weight of squid declines as eggs are released, this function was fit to data for mature females that had not yet spawned (pre-ovulatory females).

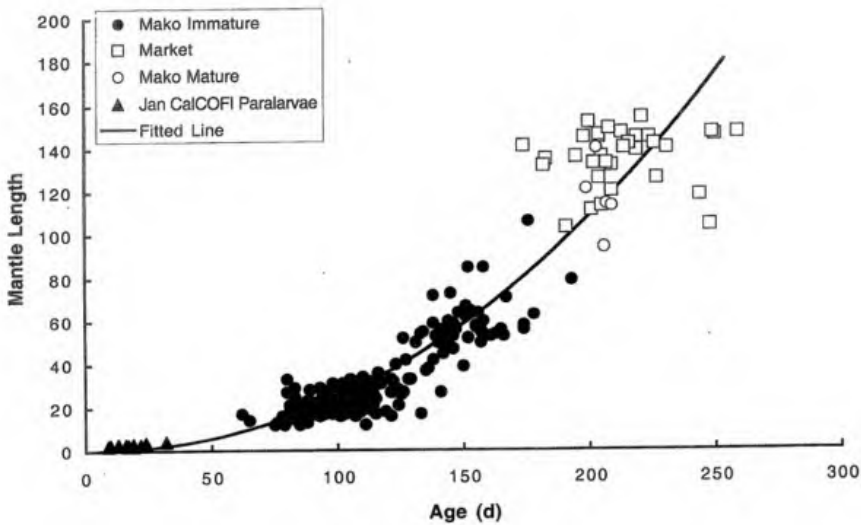


Figure 1-4. Relationship between age (in days) and DML (in mm) of market squid for a cohort hatched in November to December 1999 (Reproduced from Butler et al. 2001). In the figure legend, R/V “Mako” is the name of the vessel, “Market” indicates adult squid were collected from the commercial fishery, and “Jan CalCOFI Paralarvae” indicates paralarvae samples collected from a January CalCOFI cruise.

► [View Detailed Description](#)

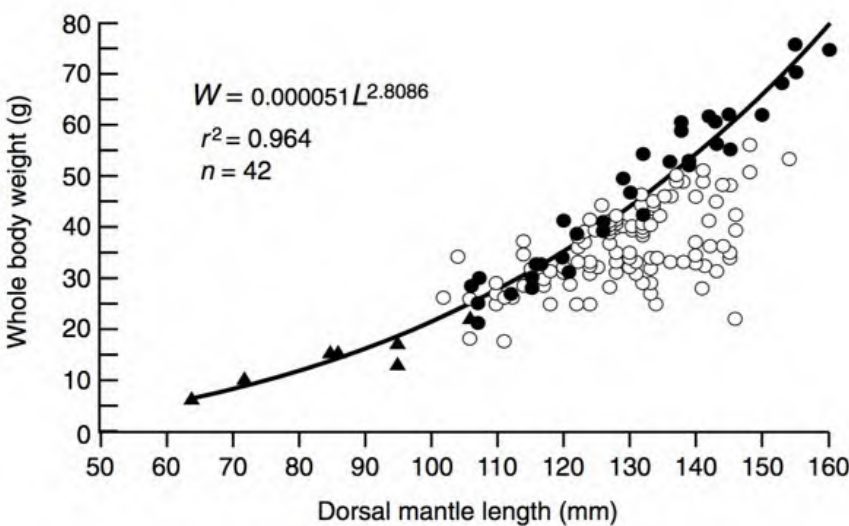


Figure 1-5. Female market squid whole body weight as a function of DML length prior to spawning (n=158). Solid triangles represent immature females, solid circles represent mature females that have not spawned, and open circles represent females that have spawned (Reproduced from Macewicz et al. 2004).

► [View Detailed Description](#)

1.1.6. Size and Age at Maturity

Market squid begin to reach sexual maturity 5 or 6 months after hatching (Butler et al. 1999; Butler et al. 2001). At this point they begin to recruit to the fishery and are fully vulnerable by 6 months of age (Butler et al. 2001).

Maturation is thought to be size rather than age dependent, occurring at approximately 100 mm (4 in) in DML for females (Butler et al. 1999; Jackson and Domeier 2003; Maxwell et al. 2005). Females may lay a large proportion of their eggs within the first few days following maturity (Macewicz et al. 2004) and gradually lay less throughout the spawning window and prior to dying.

1.2. Population Status and Dynamics

The unique biology of cephalopods such as market squid requires a different management approach than other fisheries (Boyle 1990). Market squid exhibit very fast growth and short life spans. They are most vulnerable to fishing during mating, when males and females pair up to exchange gametes directly. Unlike other fish and invertebrates that spawn over multiple years and are often more fecund as they get older, because market squid die shortly after laying eggs, recruitment to the population is entirely dependent on the successful survival of the eggs. This may lead to concerns that a prolonged multiple-cohort failure would be highly detrimental to the population and the fishery (Boyle and Boletsky 1996; Hibberd and Pecl 2007; Zeidberg et al. 2011a).

Market squid exhibit large variability in year-to-year abundance. These fluctuations are attributed to environmental conditions influencing spawning activity and survival of recruits (Ralston et al. 2015; Van Noord, 2020; Chasco et al. 2022; Suca et al. 2022). However, these fluctuations may also reflect changes in the spatial distribution of the population, making them more available to fishermen or surveys in some years and less available in others. In addition, the central and southern California landings generally peak 6 months apart suggesting that two spawning events occur per year. The recruits from successful Monterey spawning activity may become the adults taken in the southern California fishery the following winter, and vice versa (Butler et al. 1999; Zeidberg et al. 2011b). Deeper (70.0 to 150.0 m (229.7 to 492.1 ft)) off-season or year-round spawning may exist with an annual harmonic of concentrated spawning in the spring in Monterey and in the winter in southern California due to favorable oceanographic conditions (Zeidberg et al. 2011b). Due to these life history characteristics, forecasting abundance or availability using traditional demographic models is impractical, and many squid fisheries such as the Argentine Shortfin Squid (*Illex argentinus*) fishery around the Falkland Islands and the Humboldt Squid (*Dosidicus gigas*) fishery in Mexico are managed based on the concept of “escapement” in which fishing is restricted in order to allow a certain proportion of the population to spawn successfully (Arkhipkin et al. 2015).

1.2.1. Abundance Estimates

There is information on the coast wide distribution and relative abundance of market squid from fishery-independent midwater rockfish trawl surveys that are conducted at night annually between San Diego, California and Gold Beach, Oregon in May and June by the National Marine Fisheries Service (NMFS). These surveys are part of the Southwest Fisheries Science Center (SWFSC) Rockfish Recruitment and Ecosystem Assessment Survey. Data are incorporated into the California Current Integrated Ecosystem Assessment (CCIEA) project available at the National Oceanic and Atmospheric Administration (NOAA) CCIEA website (CCIEA 2023). Due to the timing and location of these trawl surveys, as well as the ability of larger squid to avoid the trawl nets, these surveys only provide an index of relative abundance of juvenile squid (Figure 1-6) (Ralston et al. 2018). This index was paired with a model of egg escapement developed by Dorval et al. (2013) to develop an estimate of total abundance in three biogeographic regions (Tables 1-1, 1-2, and 1-2). These regions include (1) Bodega Bay to Point Piedras, (2) Santa Barbara, Los Angeles, and the northern Channel Islands, and (3) San Diego to the southern Channel Islands (Dorval et al. 2013). Because the three major fishing port complexes (Monterey, Ventura, and Los Angeles) do not always represent mutually exclusive fishing areas, these regions were used to distinguish spatially explicit spawning grounds. This represents the best available index of absolute abundance for the market squid population in California.

In 2019, more juvenile market squid were captured in the Juvenile Salmon and Ocean Ecosystem Survey (JSOES) off Oregon and Washington than any other year in the 22-year time series (Thompson et al. 2019). This marks a recent upward trend in the presence of market squid in these northern daytime surface trawls. JSOES has been conducted by the Northwest Fisheries Science Center in late June every year between 1998 and 2019.

A time series of the larval abundance (paralarvae) of market squid is also available from the California Cooperative Fisheries Investigation (CalCOFI) sampling program (Figure 1-7) (See section 4.2.2 for more information on CalCOFI sampling).

Zeidberg et al. (2006) found a significant linear relationship between a paralarvae density index collected in February in the SCB and Catch Per Unit Effort (CPUE) in southern California the following November from 2000 to 2003. This suggests that the number of paralarvae could be used to predict adult abundance and potentially be used as an indicator in management. Continued efforts to assess this paralarvae index as a potential management tool are on-going by the Department, the California Wetfish Producers Association (CWPA), and the SWFSC (Van Noord, 2020). Van Noord and Dorval (2017) found a strong relationship between paralarval density and distribution to local Sea Surface Temperature (SST) and ocean productivity (specifically a measurement of zooplankton abundance). Relative paralarval abundance and fishery landings remained high during cool and productive La Niña conditions. Conversely, a strong El Niño Southern Oscillation (ENSO) drove dramatic declines in relative paralarval abundance followed by a decline in fishery landings (Figure 1-8).

Some information on the status of market squid can be drawn from fishery-dependent indicators. Yearly catch in southern and central California can provide some information on recruitment from the previous season, but catches may provide a negatively biased estimate of the population strength unless economic factors are accounted for (Hardwick and Spratt 1979). Yearly catch may be influenced by availability, market demand, and processing capacity. In addition, because fishing occurs on shallow-water spawning aggregations, catches may not consistently reflect the overall stock size. Market squid embryos have been documented at greater depths than what the fishery targets (Navarro et al. 2018), and adults may spawn outside the temporal and spatial window of the fishing fleet (e.g., further offshore, deeper waters, further north, or further south). The fishery also closes once the seasonal catch limit is reached during episodes of high abundance. Thus, catch or CPUE alone may not be a suitable index of abundance.

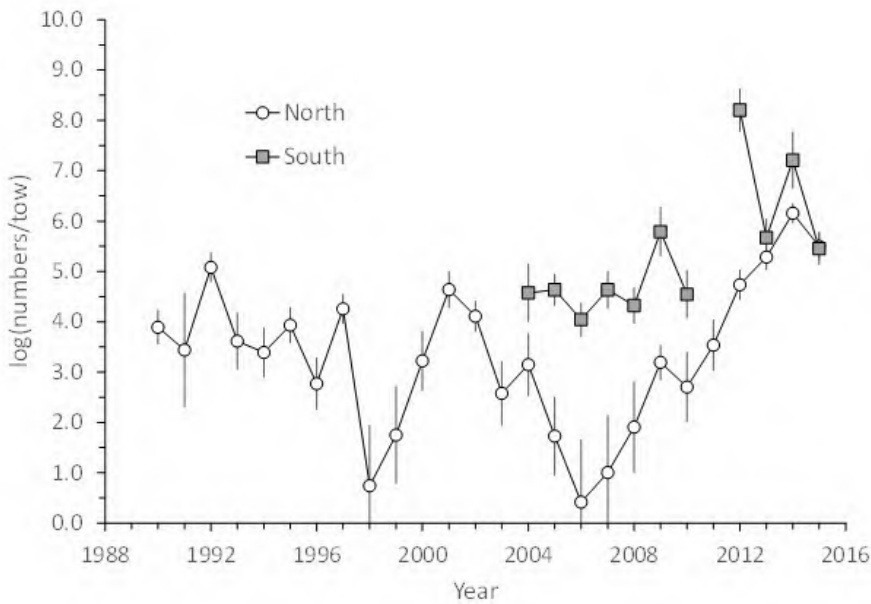


Figure 1-6. Annual variation in the abundance of market squid based on standardized midwater trawl survey data (logged numbers of squid per tow) for north and south of Point Conception (see Ralston et al. 2018 for methods). The error bars \pm 1.0 standard error (Reproduced from Ralston et al. 2018).

[View Detailed Description](#)

Table 1-1. Quarterly estimates of market squid spawning stock biomass (metric tons) by year in biogeographical region 1 (Dorval et al. 2013). Estimates based on the method of Dorval et al. (2013), assuming a natural mortality rate of 0.15 and an egg laying rate of 0.45 (Reproduced from Appendix II in Dorval et al. 2024).

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1999	-	-	-	-
2000	-	7,631	2,539	440
2001	-	1,447	6,473	982

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
2002	1,876	19,523	6,438	2,864
2003	-	6,821	9,656	5,715
2004	-	6,319	2,766	-
2005	-	3,349	1,126	-
2006	-	1,446	163	-
2007	-	-	-	-
2008	-	-	-	-
2009	-	479	-	-
2010	-	15,985	9,696	6,138
2011	-	6,197	7,258	-
2012	-	-	12,039	26,123
2013	-	775	19,945	1,597
2014	-	20,223	32,330	-
2015	-	314	15,979	6,568
2016	-	-	12,295	-
2017	-	2,469	6,682	546
2018	-	9,299	2,382	2,607
2019	202	282	3,873	-
2020	-	9,763	5,060	312
2021	569	-	4,545	-
2022	-	-	1,568	-

Table 1-2. Quarterly estimates of market squid spawning stock biomass (metric tons) by year in biogeographical region 2 (Dorval et al. 2013). Estimates based on the method of Dorval et al. (2013), assuming a natural mortality rate of 0.15 and an egg laying rate of 0.45 (Reproduced from Appendix II in Dorval et al. 2024).

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1999	10,260	19,069	3,095	51,124
2000	29,523	11,019	3,187	127,275
2001	19,081	10,252	3,986	42,345
2002	12,302	1,030	2,458	14,738
2003	4,137	862	1,556	32,561
2004	18,905	13,775	-	36,702
2005	108,656	-	-	6,460
2006	5,686	-	656	9,557
2007	78,360	345	401	-
2008	13,038	-	4,371	-
2009	62,093	-	-	78,276
2010	-	-	-	77,716
2011	6,829	-	37,329	90,652
2012	5,623	2,105	45,029	123,901
2013	-	12,169	54,702	71,319
2014	-	4,530	38,365	38,273
2015	-	595	19,608	9,034
2016	-	4,291	13,311	-
2017	1,001	7,632	1,124	-
2018	-	178	961	40,716
2019	5,604	628	-	4,827

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
2020	7,689	-	-	-
2021	-	3,827	1,453	25,499
2022	30,246	1,830	5,292	-

Table 1-3. Quarterly estimates of market squid spawning stock biomass (metric tons) by year in biogeographical region 3 (Dorval et al. 2013). Estimates based on the method of Dorval et al. (2013), assuming a natural mortality rate of 0.15 and an egg laying rate of 0.45 (Reproduced from Appendix II in Dorval et al. 2024).

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1999	2803	5704	276	9566
2000	11695	2,593	1,161	21114
2001	31831	701	1,048	51640
2002	70,594	964	135	523
2003	1067	727	1,904	2,281
2004	31635	401	-	377
2005	6952	1,120	1,992	29451
2006	70261	4,501	3797	-
2007	-	-	354	2903
2008	-	1382	2873	-
2009	-	2367	6909	-
2010	28469	-	2,460	107,789
2011	1648	-	11,536	61731
2012	10697	-	25,428	130,630
2013	2808	5765	34,171	39,074
2014	767	4,855	-	3017

Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
2015	-	-	-	348
2016	-	4387	-	-
2017	-	4,762	921	5642
2018	10153	122	-	3,877
2019	7833	178	-	-
2020	6271	-	-	1029
2021	3466	860	866	3542
2022	5414	1027	1,387	-

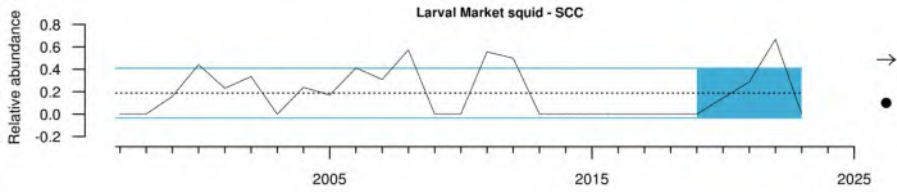


Figure 1-7. Index of larval abundance for market squid in southern California. These data were collected during spring CalCOFI surveys (CalCOFI 2021). Data are summed across all sampled stations, and units are in number under 10 square meters of surface area; ln (abundance+1). The dashed line represents the long-term mean, and the solid lines represent the mean +/- one standard deviation. The blue shading and arrow represent recent trends (Reproduced from CCIEA 2023).

► [View Detailed Description](#)

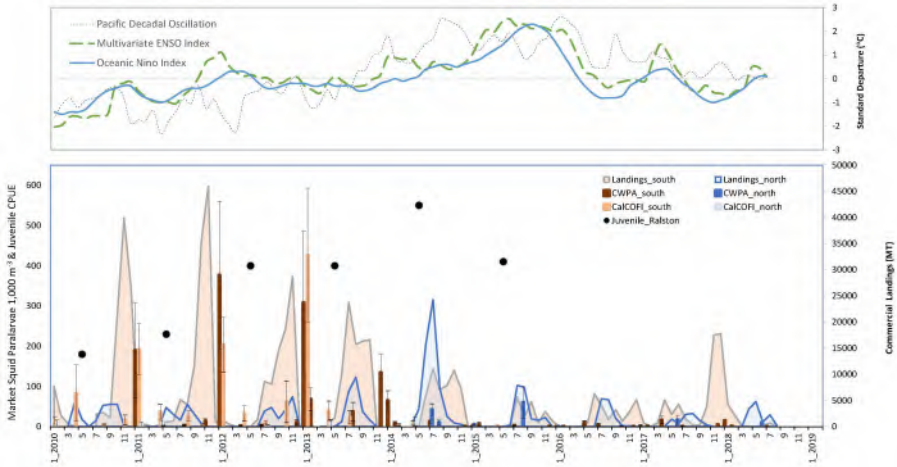


Figure 1-8. ENSO influences on market squid in the CCE. Top panel displays the trends and deviations from the average for three oceanographic and atmospheric indices. Bottom panel displays market squid paralarval abundance and juvenile CPUE from Ralston et al. 2018 on the left, and landings on the right y-axis. SCB information is displayed in warm colors and Monterey Bay Region data are shown in cool colors. Error bars indicate two standard error. All data span September 2010 through September 2018. (Figure reproduced from Van Noord and Dorval 2017).

► [View Detailed Description](#)

1.2.2. Age Structure of the Population

Market squid age can be determined using statoliths, which are hard calcified structures suspended in the balance or hearing receptor of some aquatic invertebrates. Similar structures called otoliths exist in fish. Rings are deposited daily on statoliths as the animal develops and may be used to determine life span (Figure 1-9). Daily ring deposition has been validated for several squid species including market squid and has been shown to be an accurate method for ageing squid (Jackson and Domeier 2003; Hurley et al. 1985; Lipinski 1986; Jackson 1990a, b, 1994, 1998; Bettencourt et al. 1996; Spratt 1979).

Squid are a short-lived species, and the average age of squid taken in the fishery is 6 months (range 4 to 10 months) (Butler et al. 2001). Available age data exhibit little variation among months. This strongly suggests that a new cohort enters the fishery almost monthly. Figure 1-10 shows the age structure of the market squid catch by sex from port samples collected from November 1998 through July 2000. The mean age of harvested market squid was 188 days. More than 99% of the squid aged could be sexed, suggesting that the fishery primarily targets mature squid

Statolith samples from the 2000-2019 commercial catch have not been aged, and thus it is not yet possible to tell if the age structure of the stock has changed over time. Because it is thought that size is a better indicator of sexual maturity, potential changes in both size and age structure of the stock could provide valuable insight in to fishing mortality and natural mortality. Average size fluctuates between and among fishing seasons, which could be attributed to different cohorts (Protasio et al. 2014). However, since age data have not been analyzed, this cannot be determined at present. Future analyses of collected statoliths would provide useful information.

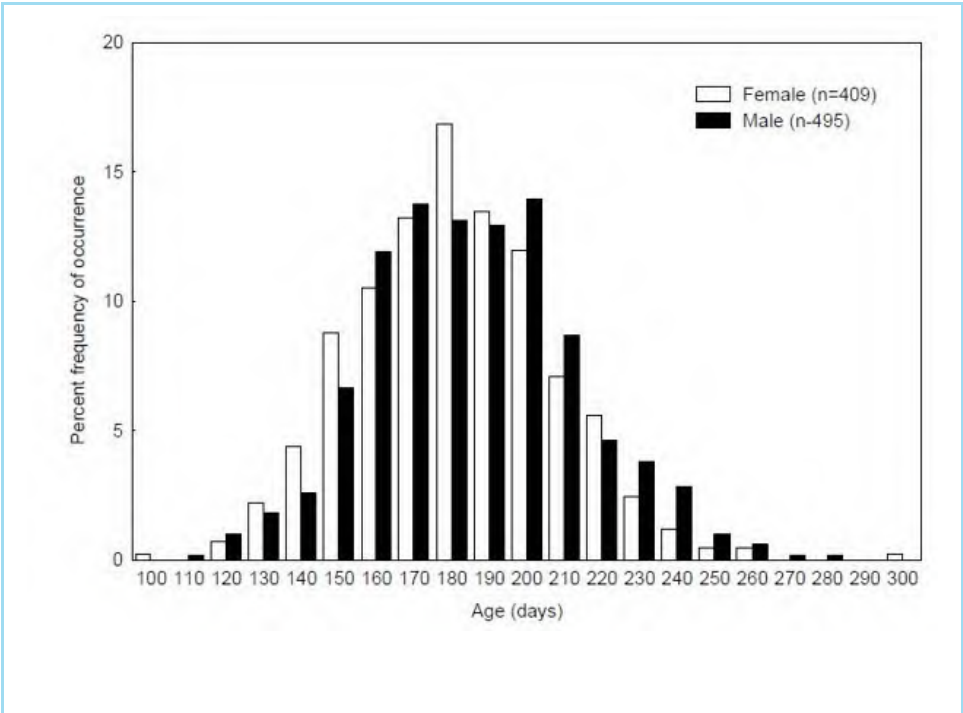
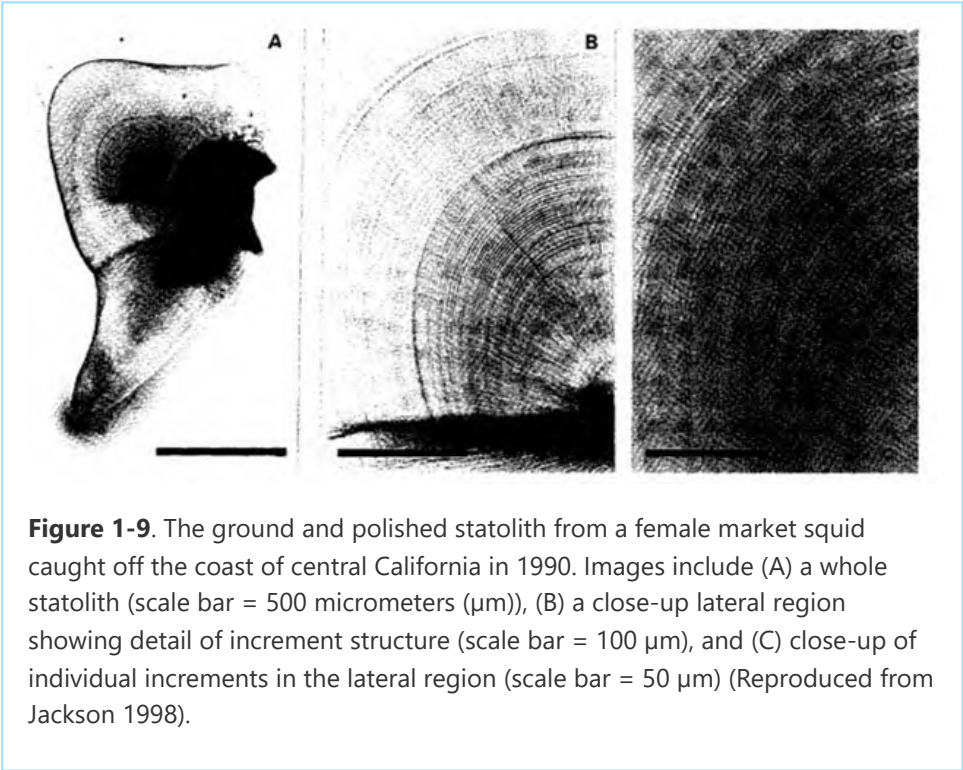


Figure 1-10. Market squid percent frequency of occurrence by age and sex. Port samples used to determine percent frequency of occurrence were collected from November 1998 through July 2000 (Reproduced from the MSFMP).

► [View Detailed Description](#)

1.3. Habitat

The definition of Essential Fish Habitat (EFH) for Coastal Pelagic Species (CPS), such as market squid, Pacific sardine (*Sardinops sagax caerulea*), Pacific mackerel (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), and jack mackerel (*Trachurus symmetricus*), is based on a temperature range bordered by the geographic area where CPS occurs at any life stage, have occurred historically, or where environmental conditions do not preclude colonization by CPS (PFMC 2023a). For the east-west geographic boundary, the EFH for CPS includes all marine and estuarine waters from the shoreline along the California, Oregon, and Washington coasts offshore to the limits of the Exclusive Economic Zone and above the thermocline, where SSTs range from 50 to 79 °F (10 to 26 °C), the upper tolerance of CPS finfish (PFMC 2023a). The southern boundary is the United States-Mexico maritime boundary. The northern boundary is more dynamic and is defined as the position of the 10°C isotherm, which varies seasonally and annually (PFMC 2023a).

Not much is known about the specific pelagic habitat requirements of adult market squid, but there is some evidence that their depth is limited by the Oxygen Minimum Zone (OMZ), which is a naturally occurring area ranging from a depth of 500.0 to 1,000.0 m (1,640.2 to 3,280.8 ft) where the amount of dissolved oxygen is less than that needed to support many marine species (Helly and Levin 2004; Stewart et al. 2014).

Some studies have mapped the spatial distribution and extent of egg beds using Remotely Operated Vehicles (ROVs) along portions of the California coast (Young et al. 2011; Zeidberg et al. 2011b). Major spawning grounds fished in California are located in Monterey Bay and the SCB. Zeidberg et al. (2011b) found that 95% of squid eggs surveyed were found on sandy benthic substrate in temperatures between 10.0 to 14.4 °C (50.0 to 57.9 °F) at depths between 20.0 and 70.0 m (65.6 to 229.7 ft). During spawning, egg capsules are inserted into sand with a thin anchoring strand, and wave surge ventilates the eggs (Zeidberg et al. 2011b). This depth may provide a range where the wave action is enough to provide oxygen, but not so strong that it dislodges the egg capsules. From in-situ observations, Navarro et al. (2018) found that market squid embryos require dissolved oxygen levels greater than 160 millimole and a pH greater than 7.8.

Squid eggs have been found significantly shallower in central California (13.0 to 61.0 m (42.7 to 200.1 ft)) than around the Channel Islands (20.0 to 93.0 m (65.6 to 305.1 ft)), in areas having a temperature of 10.0 to 12.0 °C (50 to 53.6 °F). This suggests that substrate and temperature, rather than depth, are the primary features of suitable spawning habitat (Zeidberg et al. 2011b). This temperature preference was also supported by laboratory studies that found that hatch rates are maximized when eggs are reared at temperatures between 9.0 and 14.0 °C (48.2 to 57.2 °F) (Zeidberg et al. 2011a). The upper and lower limits of viability appear to be 25 °C (77 °F) and below 7.0 °C (44.6 °F), respectively (Zeidberg et al. 2011a).

If temperature, rather than depth or substrate, is the primary determinant of suitable spawning habitat, then the amount of spawning habitat may vary from year to year, and this may impact egg survival rates. This may also explain the variability observed in the fishery, both seasonally and between years. The concentrated spawning aggregations targeted by the southern California fishery in December/January and the central California fishery in May/June, may be triggered by favorable ocean bottom temperatures (Young et al. 2011). Additionally, the year-to-year variation observed in the population and the low commercial landings seen during and after El Niño events may be due to a lack of suitable spawning habitat in warmer water years (Zeidberg et al. 2011b), a preference for deeper less accessible spawning grounds, or other unknown factors.

1.4. Ecosystem Role

Market squid are a key nearshore prey species in the CCE (Szoboszlai et al. 2015). The CCE is an eastern boundary current upwelling system off the West Coast of the United States, extending from the Strait of Juan de Fuca in the north to the Mexican border in the south. Market squid can play a fundamental role as a mid-trophic level species, in which they transfer energy up the food chain from zooplankton, crustaceans, and small fish (their prey) to large fish, marine mammals, and birds (their predators). Market squid are classified as a mid-energy taxa and are sometimes a central part of the prey assemblage in years in which the CCE experiences cooler waters, strong upwelling, and higher productivity (Harvey et al. 2018).

1.4.1. Associated Species ▼

Several marine worms use squid as a host species. Larval nematodes (roundworms), cestodes (tapeworms) and polychaetes (bristleworms) have all been recovered from squid and/or squid eggs. Nematodes, cestodes, and their larval stages have been found in market squid (Walthers and Gillespie 2002). In Monterey Bay, Riser (1949) cited infestation of squid by two types of plerocercoid larvae. These larvae are tetraphyllidean cestodes that infest the large intestine of the squid. At Point Mugu, squid sampled from a commercial seafood outlet exhibited infestation by larval cestodes (orders Tetraphyllidea and Pseudophyllidea) and nematodes. These parasites were found to infect the eye, stomach, intestines, body cavity and tissues at a rate of 76.9% (Dailey 1969). The polychaete worm *Capitella ovincola* was thought to be a predator of market squid eggs, because it has been found inside squid egg capsules (Fields 1965). In fact, *C. ovincola* eat the outer casing of the egg capsule, not the embryo itself (Zeidberg et al. 2011a). This does not appear to affect squid fitness either by decreasing the egg hatching rate or triggering premature hatching (Morris et al. 1980) and was found to slightly increase the hatch rate of market squid eggs reared under laboratory conditions, suggesting a symbiotic relationship between these organisms (Zeidberg et al. 2011a).

1.4.2. Predator-prey Interactions ▼

Market Squid as Predators

Market squid feed on a variety of prey during their life cycle. As larvae and juveniles, squid consume copepods and euphausiids. As adults, market squid feed on fish, polychaete worms, squid (cannibalism), and crustaceans such as shrimp and pelagic red crab. Market squid have also been found in commercial catches of northern anchovy, Pacific sardine, Pacific herring (*Clupea pallasii*), Pacific mackerel, jack mackerel and Pacific saury (*Cololabis saira*) where they feed with and most likely upon these fish (Fields 1965).

Prey composition fluctuates with squid age, size, and reproductive status, as well as by depth and location (Karpov and Cailliet 1979). The availability of prey and the behavior of market squid at different depths and locations may influence feeding behavior. Karpov and Cailliet (1978, 1979) found that crustaceans and cephalopod fragments were ingested at higher frequencies on spawning grounds than on non-spawning grounds. Inshore versus offshore samples of squid indicated differences in diet composition. In deeper waters, euphausiids and copepods were dominant prey items, while true cannibalism (intake of whole cephalopods) and fish consumption dominated in shallow waters.

Market Squid as Prey

Market squid are an integral part of the food web to many marine organisms. A meta-analysis of dietary studies in the CCE found market squid in the diet of 51 predators (Szoboszlai et al. 2015). Fish, seabirds, and marine mammals all consume squid as a prey item, as does the Humboldt squid (*Dosidicus gigas*) (Stewart et al. 2014). Bat stars (*Asterina miniata*), Kellet's whelks (*Kelletia kelletii*), and chestnut cowries (*Cypraea spadicea*) have also been observed to eat market squid eggs (Zeidberg et al. 2004).

Squid has been documented as a prevalent dietary component of marine mammals (Sinclair 1992; Fields 1965) and seabirds (Morejohn et al. 1978). In Monterey Bay, 19 species of fish were found to feed on market squid, including many commercially fished species such as Pacific bonito (*Sarda lineolate*), salmon, halibut,

and tuna (Figure 1-11) (Fields 1965; Morejohn et al. 1978). In fact, predators from many trophic levels consume both small pelagic fishes, such as northern anchovy and Pacific sardine, and market squid as either a primary or supplementary food source (Tables 1-4, 1-5, and 1-6).

The proportion of squid in predators' diets varies dramatically between species, geographical location, and environmental conditions. Most squid predators are not squid specialists - squid is rarely the sole prey item. Squid cannot be relied on as a stable food source because of its highly variable abundance and limited energetic value (O'Dor and Webber 1986). Therefore, squid predators often switch to more abundant or energetically profitable prey species (Ainley et al. 1996; Sydeman et al. 1997), or target squid when they are most abundant during spawning aggregations and minimal energy is needed for capture.

Squid has been documented as a prevalent dietary component of marine mammals (Sinclair 1992; Fields 1965) and seabirds (Morejohn et al. 1978). In Monterey Bay, 19 species of fish were found to feed on market squid, including many commercially fished species such as Pacific bonito (*Sarda lineolata*), salmon, halibut, and tuna (Figure 1-11) (Fields 1965; Morejohn et al. 1978). In fact, predators from many trophic levels consume both small pelagic fishes, such as northern anchovy and Pacific sardine, and market squid as either a primary or supplementary food source (Tables 1-4, 1-5, and 1-6)

In terms of frequency-of-occurrence, the presence of squid varies dramatically. For seabirds such as the common murre (*Uria aalge*), squid composes 6 to 20% of the diet (by weight) depending on season and is usually ranked 3rd or 4th after northern anchovy, Pacific herring, and shiner surfperch (*Cymatogaster aggregata*) (Ainley et al. 1996). For diving birds such as rhinoceros auklets (*Cerorhinca monocerata*), common murres, Artic loons (*Gavia arctica*), and Brandt's cormorants (*Phalacrocorax penicillatus*), the frequency-of-occurrence of squid in the diet can range from 33 to 85% (Baltz and Morejohn 1977). For plunging, surface feeding birds, such as shearwaters and gulls, the frequency-of-occurrence ranges from 0-67% (Baltz and Morejohn 1977).

Market squid are also prey for commercial and recreational fishes, such as white seabass (*Atractoscion nobilis*), yellowtail (*Seriola lalandi*), kelp bass (*Paralabrax clathratus*), barred sand bass (*Paralabrax nebulifer*), California barracuda (*Sphyraena argentea*), California halibut (*Paralichthys californicus*), and other nearshore species. For Chinook salmon (*Oncorhynchus tshawytscha*), squid composed only 7 to 9% of diet (by volume) and ranked 3rd or 4th behind northern anchovy, euphausiids, and juvenile rockfish depending on location (Morejohn et al. 1978). At other locations along the west coast, squid is not a significant Chinook salmon prey item since they prey mainly on fish (Groot and Margolis 1991). For chilipepper rockfish (*Sebastes goodei*), squid ranked 3rd behind juvenile rockfish and other fishes (Morejohn et al. 1978). Other fish predators in which squid ranked high as a prey item include mainly bottom dwelling species such as curlfin turbot (*Pleuronichthys decurrens*), speckled sanddab (*Citharichthys stigmaeus*), Pacific sanddab (*Citharichthys sordidus*), lingcod (*Ophiodon elongatus*), petrale sole (*Eopsetta jordani*), and Pacific halibut (*Hippoglossus stenolepis*) (Morejohn et al. 1978). Several pelagic species also feed on squid when available such as blue shark (*Prionace glauca*), common thresher shark (*Alopias vulpinus*), and albacore tuna (*Thunnus alalunga*) (Morejohn et al. 1978).

Squid occurs in 35 to 44% of California sea lion (*Zalophus californianus*) scat samples collected at rookery sites in the SCB, which can represent volumes as high as 27% of the diet by weight in non-El Niño years and 16% in El Niño years (Lowry and Carretta 1999). In terms of prey rank, squid was either the primary or secondary sea lion prey item after northern anchovy, depending on location and environmental conditions. Sea lions have a diverse diet and are opportunistic feeders suggesting that an individual can fulfill intake needs by combining multiple prey sources when one energy taxa is absent (Fiechter et al. 2016).

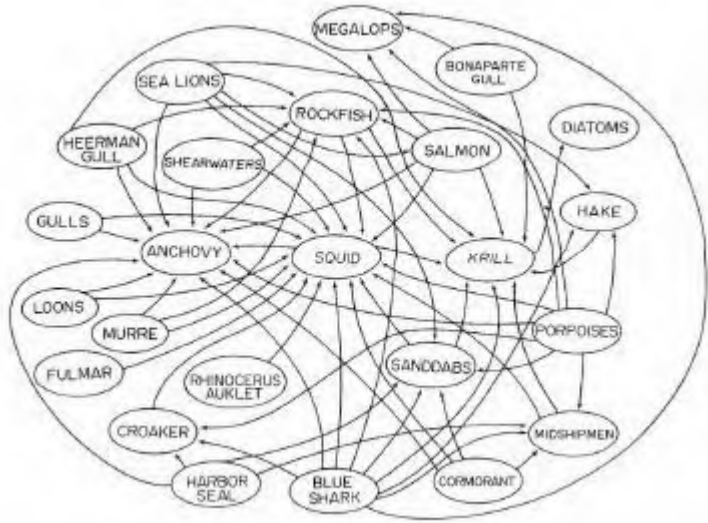


Figure 1-11. Food web for market squid involving commercially important or abundant fish, birds, and marine mammals (Reproduced from Morejohn et al. 1978).

Table 1-4. Known fish predators of CPS, including market squid (Reproduced from the MSFMP).

Common Name	Species	Common Name	Species
Northern anchovy	<i>Engraulis mordax</i>	Yellowtail	<i>Seriola dorsalis</i>
Pacific sardine	<i>Sardinops sagax</i>	White seabass	<i>Atractoscion nobilis</i>
Pacific whiting	<i>Merluccius productus</i>	Queenfish	<i>Seriphus politus</i>
Common thresher shark	<i>Alopias vulpinus</i>	California corbina	<i>Menticirrhus undulatu</i>
Bonito shark	<i>Isurus oxyrinchus</i>	White croaker	<i>Genyonemus lineatus</i>
Soupfin shark	<i>Galeorhinus zyopterus</i>	Surfperches (many species)	<i>Amphistichus</i> spp.
Blue shark	<i>Prionace galuca</i>	California barracuda	<i>Sphyrana argentea</i>
Pacific electric ray	<i>Tetronarce californica</i>	Pacific (chub) mackerel	<i>Scomber japonicus</i>
Silver (Coho) salmon	<i>Oncorhynchus kisutch</i>	Pacific bonito	<i>Sarda lineolata</i>
King (Chinook) salmon	<i>Oncorhynchus tshawytscha</i>	Albacore	<i>Thuunus alalunga</i>

Common Name	Species	Common Name	Species
Steelhead	<i>Oncorhynchus mykiss</i>	Bluefin tuna	<i>Thunnus orientalis</i>
Rockfish (many species)	<i>Sebastes</i> spp.	Swordfish	<i>Xiphias gladius</i>
Striped bass	<i>Morone saxatilis</i>	Striped marlin	<i>Kajikia audax</i>
Barred sand bass	<i>Paralabrax nebulifer</i>	Giant seabass	<i>Stereolepis gigas</i>
Kelp bass	<i>Paralabrax clathratus</i>	Lingcod	<i>Ophiodon elongatus</i>
Spotted sand bass	<i>Paralabrax maculatofasciatus</i>	California scorpionfish	<i>Scorpaena guttata</i>
Ocean whitefish	<i>Caulolatilus princeps</i>	Dogfish	<i>Squalus acanthias</i>
Jack mackerel	<i>Trachurus symmetricus</i>	--	

Table 1-5. Known bird predators of CPS, including market squid (Reproduced from the MSFMP).

Common Name	Species	Common Name	Species
Black-footed albatross	<i>Diomedea nigripes</i>	Black-legged kittiwake	<i>Rissa tridactyla</i>
Fulmar	<i>Fulmarus glacialis</i>	Common murre	<i>Uria aalge</i>
Sooty shearwater	<i>aleuticus Puffinus griseus</i>	Pigeon guillemot	<i>Cepphus columba</i>
	<i>Puffinus puffinus</i>		<i>Brachyramphus marmoratus</i>
Manx shearwater	<i>Puffinus tenuirostris</i>	Marbled murrelet	<i>Synthliboramphus craveri</i>

Common Name	Species	Common Name	Species
Short tailed shearwater	<i>Puffinus creatopus</i>	Craveri's murrelet	<i>Synthliboramphus scrippsi</i>
Pink footed shearwater	<i>Oceanodroma leucorhoa</i>	Scripps's murrelet	<i>Synthliboramphus hypoleucus</i>
Leach's storm petrel	<i>Oceanodroma homochroa</i>	Guadalupe murrelet	<i>Synthliboramphus antiquus</i>
Ashy storm petrel	<i>Oceanodroma melania</i>	Ancient murrelet	<i>Ptychoramphus aleuticus</i>
Black storm petrel	<i>Pelecanus occidentalis</i>	Cassin's auklet	<i>Cerorhinca monocerata</i>
Brown pelican	<i>Phalacrocorax auritus</i>	Rhinoceros auklet	<i>Fratercula corniculata</i>
Double-crested cormorant	<i>Phalacrocorax penicillatus</i>	Horned puffin	<i>Fratercula cirrhata</i>
Brandt's cormorant	<i>Phalacrocorax pelagicus</i>	Tufted puffin	<i>Haliaeetus leucocephalus</i>
Pelagic cormorant	<i>Larus glaucescens</i>	Bald eagle	<i>Pandion haliaetus</i>
Glaucous-winged gull	<i>Larus occidentalis</i>	Osprey	<i>Thalasseus elegans</i>
Western gull	<i>Larus heermanni</i>	Elegant tern	<i>Hydroprogne caspia</i>
Heerman's gull	<i>Larus delawarensis</i>	Caspian tern	<i>Sterna forsteri</i>
Ring-billed gull	<i>Larus californicus</i>	Forster's tern	<i>Sternula antillarum browni</i>

Table 1-6. Known mammal predators of CPS, including market squid (Reproduced from the MSFMP).

Common Name	Species	Common Name	Species

Common Name	Species	Common Name	Species
Northern fur seal	<i>Callorhinus ursus</i>	Bottlenose dolphin	<i>Tursiops truncatus</i>
Guadalupe fur seal	<i>Arctocephalus townsendi</i>	Pilot whale	<i>Globicephala</i> spp.
Steller sea lion	<i>Eumetopias jubatus</i>	Blue whale	<i>Balaenoptera musculus</i>
California sea lion	<i>Zalophus californianus</i>	Fin whale	<i>Balaenoptera physalus</i>
Northern elephant seal	<i>Mirounga angustirostris</i>	Sei whale	<i>Balaenoptera borealis</i>
Harbor seal	<i>Phoca vitulina</i>	Minke whale	<i>Balaenoptera acutorostrata</i>
Common dolphin	<i>Delphinus capensis</i>	North Pacific right whale	<i>Eubalaena japonica</i>
Harbor porpoise	<i>Phocoena phocoena</i>	Humpback whale	<i>Megaptera novaeangliae</i>
Dall's porpoise	<i>Phocoenoides dalli</i>	Eastern North Pacific gray whale	<i>Eschrichtius robustus</i>
Pacific white-sided dolphin	<i>Lagenorhynchus obliquidens</i>	--	

1.5. Effects of Changing Oceanic Conditions



The CCE is a highly variable ecosystem and is known to fluctuate significantly at annual, decadal, or longer time scales. At smaller time scales the ENSO is a short-term fluctuation between periods of cooler water, strong upwelling, and high nutrient availability and those characterized by warmer water, delayed or weak upwelling, and lower nutrient availability. Strong El Niño periods can produce considerable reductions in primary production in the CCE, which can alter the abundance and distribution of CPS such as market squid (Van Noord, 2020; Chasco et al. 2022; Suca et al. 2022).

Due to their short life span, market squid are likely very responsive to changing environmental conditions that affect juvenile survival and recruitment to the fishery. Squids and other cephalopods have high adaptive capacity and the propensity to modify their own physiology through protein-altering ribonucleic acid (RNA) editing, which could help with acclimating to variable ocean conditions and temperature changes (Voss and Rosenthal, 2023). These physiological advantages paired with a changing ocean environment may result in

shifts in suitable habitats for market squid, including an expansion or shift of fishable biomass to more northern latitudes north of Point Conception (Burford et al. 2020; Suca et al., 2022). For the southerly spawning grounds, research suggests that the larval abundance of Market Squid is lower during warmer periods (Koslow and Allen 2011). Similarly, landings of market squid in California’s primary southern fishing grounds are also significantly lower during El Niño events (Zeidberg et al. 2006). The growth rate and size at maturity of market squid during warmer periods have also been found to be lower (Butler et al. 1999; Jackson and Domeier 2003; Reiss et al. 2004), and this may reduce the reproductive output of female squids (Henry et al. 2003). These lower growth rates are likely due to food limitations (Jackson and Domeier 2003). Climate change is expected to alter ENSO frequencies and duration, but the levels are still impossible to predict. The magnitude of variability in the system may increase, leading to more extreme conditions.

Climate change is also altering the physical and chemical properties of ocean water off the coast. Ocean warming, changes to the pH of ocean water via ocean acidification, and changes in the oxygen content of ocean water may expand or compress the availability of suitable habitat for market squid spawning (Zeidberg et al. 2011b; Navarro et al. 2018; Burford et al. 2022). It is hypothesized that this could lead to increasingly localized and dense spawning, resulting in potentially important changes for both the fishery and market squid ecology generally. Naturally occurring hypoxic OMZs off the coast of California have been getting shallower (Bograd et al. 2008) and could compress the depth range for adult market squid (Stewart et al. 2014).

← Species-at-a-Glance

The Fishery →

 Related Links

[California Market Squid Fishery Management Plan](#)
[California Department of Fish and Wildlife Pelagic Fisheries and Ecosystem Program](#)
[Marine Fisheries Data Explorer](#)
[California Department of Fish and Wildlife License Statistics](#)
[California Wetfish Producers Association](#)
[California Cooperative Oceanic Fisheries Investigations](#)
[California Current Integrated Ecosystem Assessment](#)
[National Oceanic and Atmospheric Administration List of Fisheries](#)

Last Updated: The Market Squid Enhanced Status Report was updated in 2024.

Contact Us: To contact CDFW regarding Market Squid, please [email CDFW's Marine Region](#) or call 831-649-2870.

Citation: California Department of Fish and Wildlife. 2024 Market Squid, *Doryteuthis (Loligo) opalescens*, Enhanced Status Report.

Contributor(s): Katie Grady, Sarah Valencia, Dianna Porzio

Acknowledgement(s):

Market Squid Enhanced Status Report 2024



[Portal Home](#)

[Overview](#)

[Resources](#)

2.4. Social and Economic Factors Related to the Fishery

[Collapse All](#)

2. The Fishery

2.1. Location of the Fishery



The market squid fishery is centered in the nearshore waters off California, though market squid may be available in commercial quantities from British Columbia to Baja, California. Market squid harvest is allowed statewide in all areas defined as ocean water in §27, Title 14, California Code of Regulations (CCR), except where prohibited or restricted, as specified, in state Marine Protected Areas (MPAs) and round haul gear closure areas (FGC §8750-8757). Seasonal shifts in resource availability and timing of peak spawning has produced two distinct fishing areas. Vessel participation is greatest during the late fall and early winter for southern California and during the summer for central California. Fishing effort in central California is focused around Monterey Bay and tends to occur between April and September, coinciding with the upwelling season (Figure 2-1) (Zeidberg et al. 2006). The southern portion of the fishery encompasses most of the SCB including the northern and southern Channel Islands southward along the coast to La Jolla and is most active from October to February. During this time there is less stratification of the water column and more mixing due to winter storms and colder air temperatures (Zeidberg et al. 2006).

Prior to the 1980s the commercial fishery was primarily focused in Monterey Bay; however, since the 1985-1986 season, the majority of the catch has come from the SCB. Landings spiked dramatically in Monterey Bay area in 2010 and continued through 2014 (Figure 2-1). Monterey, Ventura, and Los Angeles Counties are the principal counties where squid is offloaded and distributed (Figure 2-6). While some vessels fish near home ports year-round, in general, the fleets’ mobility continues to grow. Vessels based out of Monterey will travel south and vessels from Ventura or Los Angeles will also travel north to fish.

Landings by 3 digit blocks

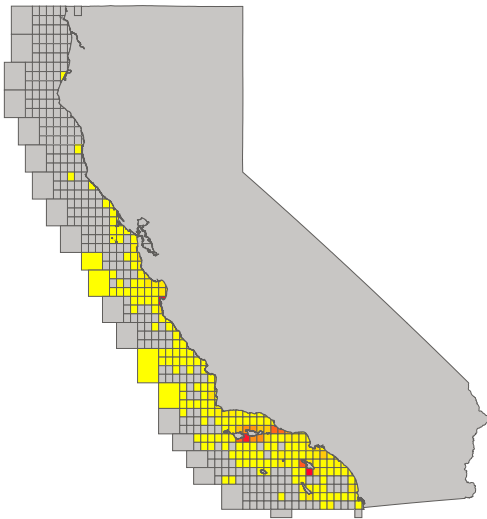


Figure 2-1. Map of California commercial market squid fishery landings (lbs) by CDFW fishing block from the 2000 to 2023 calendar year (CDFW MLDS 2024).

▼ View Detailed Description

Block ID	Total Pounds	Total Value
100		Confidential
101	0	\$0
102	0	\$0
103	0	\$0
104	0	\$0
105	0	\$0
106	0	\$0
107	0	\$0
108	0	\$0
109		Confidential
110	0	\$0
111	0	\$0
112	0	\$0
113	0	\$0
114	0	\$0
115	0	\$0
116		Confidential
117	0	\$0
118	0	\$0
119	0	\$0
Total	4,443,990,952	\$1,119,488,238

2.2. Fishing Effort

2.2.1. Number of Vessels and Participants Over Time

The commercial market squid fishery operates under a restricted access program, also referred to as a limited entry program. In a limited entry fishery, the number of persons who may participate or the number of vessels that may be used in taking a specified species of fish is limited by statute or regulation (FGC §8100). Under the limited entry program of the Market Squid Fishery Management Plan (MSFMP), a permit is required to participate in the fishery. Qualification for different types of permits and transferability options were based on historical participation in the fishery. Market squid vessel permits allow a vessel to attract squid with lights and use large seine nets or brail to capture squid. Brail permits allow a vessel to attract squid with lights and use brail gear only to capture squid. Light boat permits only allow a vessel to attract squid with lights. In most cases, squid purse seine vessels work with light boats. A light boat is typically a smaller vessel with several high-powered lights located around the vessel. The light boat uses lights to aggregate squid in a small area around the boat (Figure 2-2). Once squid are aggregated, the light boat signals the seiner to deploy its net, encircling the light boat, in order to catch the squid located under the lights.

As of July 2024, there were 68 vessel permits (1 of which is non-transferable), 28 light boat permits (two of which are non-transferable), and 48 brail permits (all transferable) issued (CDFW Automated License Database System). Through permit transfers, upgrades, or attrition the number of permits issued has changed over time. When the MSFMP was implemented in 2005, there were 92 vessel permits (12 of which were non-transferable and 3 of which were experimental), 14 brail permits, and 61 light boat permits issued (CDFW 2019). Since 2005, there have been 34 upgrades from light boat to brail permits (Figure 2-3). This influx of brail permits, particularly from 2010 to 2013, was the direct result of light boat permit upgrades.

Of the 68 limited entry vessel permits issued in 2024, 58 vessels reported market squid landings. As with many fisheries, a select number of vessels make the majority of the catch. Twenty-nine vessels made 80% of the landings (by weight) in 2023. Of the 48 brail permits issued in 2023, 14 brail-permitted vessels reported landing squid. This suggests that most brail-permitted vessels are solely acting as light boats or catching squid for sale as live bait.

As one of California's oldest fisheries, the market squid fishery began in 1863 when Chinese immigrants harvested small quantities of squid from Monterey Bay (Dickerson and Leos 1992; Fields 1965). Small skiffs were used to encircle a net around another skiff equipped with lit torches used to attract the squid (Walthers and Gillespie 2002). Italian immigrant fisherman introduced the more efficient lampara net for catching squid around 1905 (Vojkovich 1998). From 1916 to 1923, when the Department began keeping records, the fishery caught less than 1,000 short tons (tons) per year. From 1924 to 1932, landings averaged more than 2,000 tons per year. Most of this catch was dried and exported to China; some was used domestically as canned or frozen product (CDFG 2005).

The Asian market closed in 1933 due to financial conditions and the domestic market supported the Monterey fishery for many years. Landings in California were minimal until 1942 when demand from international aid programs triggered a rise in the need for squid. Landings peaked at close to 20,000 tons in the 1946-1947 season, then averaged 9,100 tons until the 1981-1982 season when greater than 25,000 tons were landed. During the 1980s, California's squid fishery grew rapidly as international demand for squid increased, especially from Europe and China, due to declining squid fisheries in other parts of the world (CDFG 2001). During this time there was a shift in the fleet from mainly brail boats to larger purse seine vessels. Brailing involves a dip net sometimes using the assistance of the vessel's hydraulics. The larger vessels equipped with round-haul gear and a tender vessel more easily met the increasing demands for squid and continue to dominate today's fishery (Figure 2-2).

As squid availability fluctuates regionally throughout the season many vessels target other fisheries, typically lower-valued CPS (e.g., northern anchovy or Pacific mackerel), salmon, or tuna. When squid are readily available, fishing effort can be driven by market conditions. During "boom" years, if squid processors have full freezers or ex-vessel value drops too low, vessels may be subject to market-imposed limits and effort declines due to lower economic incentive to fish. Under current conditions there is little evidence of market-imposed limits as the international demand for market squid remains constant, though with a market preference for larger squid, buyers sometimes impose size-based limits to maintain a higher quality product (Diane Pleschner-Steele personal communication).



Figure 2-2. Vessels using seine gear, light boats, and tender vessels to target market squid during the daylight and at night (Photo Credit: CDFW).

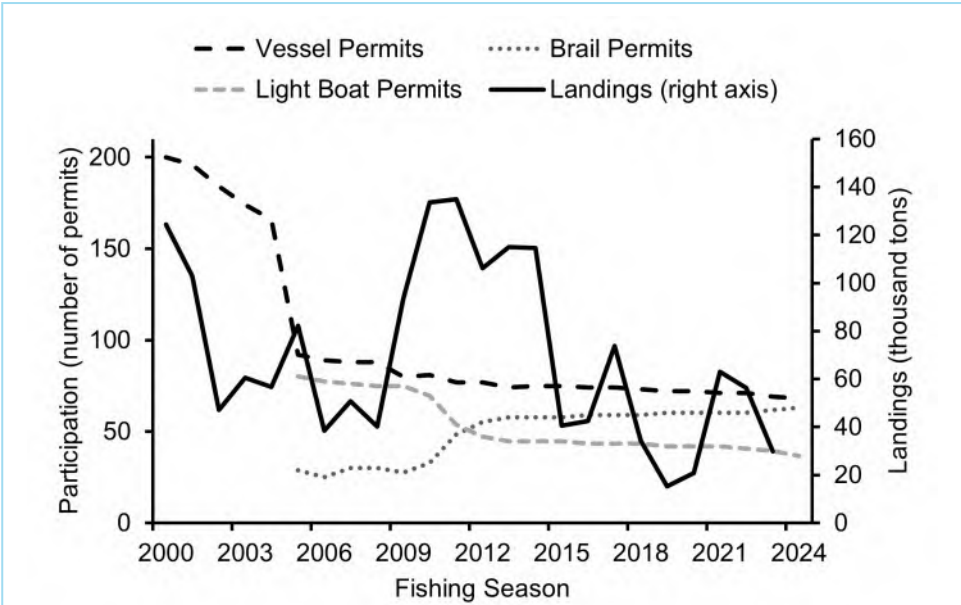


Figure 2-3. Market squid fishery participation (number of limited entry permits by type; left axis) and landings (thousand tons; right axis) from 2000 to 2023 fishing seasons (CDFW MLDS). The commercial Market Squid fishery runs on an April 1 through March 31 fishing season.

[► View Detailed Description](#)

2.2.2. Type, Amount, and Selectivity of Gear

The fleet currently uses a combination of round haul gear (purse seine or drum seine) or brail/dip net to harvest squid. Lampara nets, a legal round haul gear, are mostly obsolete in the limited entry fishery. In the 2023 squid fishing season (April 1, 2023 to March 31, 2024), approximately 97% of directed landings (by weight) came from seine (purse or drum) fishing, and less than 3% from brail/dip net fishing. Fishing occurs both during the day and at night. At night, light boats are used to aggregate squid to the surface. Nearly all vessels, brail boats, and light boats use side-scan sonar and fathometers (Lutz and Pendleton 2000). The purse seine, drum seine, and the less common lampara are encircling type nets (Figure 2-4). With the help of a tender vessel, the webbing of the seiner net is laid out to encircle a school of squid. When the school is surrounded, the bottom of the net may be closed, and drawn next to the boat (PFMC 2010). A purse seine net has metal rings sewn along its bottom edge and a cable is passed through the rings. When the cable is drawn tight, the net “purses.” A centrifugal pump is lowered into the bagged school of squid, and water and squid are pumped through a separator and into the hold of the fishing vessel (Vojkovich 1998). With brail gear, fisherman lift the fish out of the net with netted scoops.

According to Department records during the drafting of the MSFMP, the average purse seine was 18.9 m (62.0 ft) in length with an average gross tonnage (GT) of 81 tons and an average hold capacity of 84 tons (CDFG 2005). The average light boat length was 11.8 m (39.0 ft) in length with an average GT of 19 tons (CDFG 2005). Gross tonnage is a volumetric measurement used as a proxy for harvesting capacity. At the start of the 2024 squid fishing season, the average seiner was 18.4 m (60.28 ft) in length with an average GT of 83.6 tons. The average light and brail boat length was 13.5 m (44.4 ft) with an average GT of 46.5 tons for brail boats.

The lampara net was the only legal form of round haul gear in the southern bight of Monterey Bay until 1989. Once the purse and drum seines were legalized for use in this district, the market squid commercial fleet switched gear types and the lampara became mostly obsolete. During the 1970s brail vessels were the major harvesters in the southern California market squid fishery, using a power-assisted brail or dip net in conjunction with attracting lights (Kato and Hardwick 1975). By the early 1990s, the purse seine became the dominant gear for the entire coast, with the drum seine gaining popularity by the mid-1990s (CDFG 2005).



Figure 2-4. Vessels equipped with (A) purse seine gear (B) drum seine gear (C) lampara gear (D) brail/dip net gear (Photo Credit: CDFW).

2.3. Landings in the Recreational and Commercial Sectors

2.3.1. Recreational

Market squid is important in small volumes to the recreational fishery as either live or dead bait. The bait is caught primarily by commercial live bait haulers using seine or brail nets. There is no record of when recreational fisheries in California started using market squid as bait (CDFG 2005). This small volume of squid is a high value fishery, which supplies bait to recreational fisheries along the California coast, primarily in southern California. Live bait is sold from a harbor-based bait barge or from the catcher vessel at-sea. Sport fishing vessels and private skiffs also catch their own squid bait by using attracting lights and brail nets and/or rod and reel with jigs. Live and dead squid are ideal bait for a variety of California sport fisheries, particularly rockfish and white seabass. Since the sale of live bait in California was not previously documented in a manner similar to that used for the commercial landings of squid, accurate estimates of tonnage and value are not available. New reporting requirements will provide data on live bait catch beginning in 2019.

There are insufficient data to accurately describe recreational fishing effort for market squid. Some operators record scooping live squid for sale as bait in market squid logbooks.

2.3.2. Commercial

The commercial fishery for market squid is routinely one of the largest in California in terms of volume and value. From 1997 to 2023, market squid represented the largest single species fishery by volume in the state for all but 4 years (yr). The fishery was also the largest by ex-vessel value for over half of those years. The 2009 to 2014 period was particularly productive, with landings and ex-vessel revenue averaging over 125,000 tons and \$65 million per year, respectively (Figure 2-5). Landings in California prior to 1987 rarely exceeded 20,000 tons. In 2023 more than 52 million pounds of market squid were landed in California, generating roughly \$33 million in revenue (Figure 2-5). The success of the California market squid fishery is due in large part to the role of international buyers. New markets, primarily in Europe and Asia, developed over the past three decades and were willing to pay higher prices for California squid. The vast majority of squid is now frozen for export to China, Japan, and Europe where it is mainly sold for consumption. Minor amounts are also sold fresh or canned.

The commercial fishing season for market squid lasts from April 1 through March 31 of the following year. The fishery exceeded the 118,000 ton catch limit in the 2010-2011 and 2011-2012 fishing seasons. As a precaution, the fishery was closed prior to reaching the catch limit in the following three fishing seasons:

2012-2013, 2013-2014, and 2014-2015. As part of a cooperative effort, the industry voluntarily stopped fishing for squid during both the 2013-2014 and 2014-2015 fishing seasons.

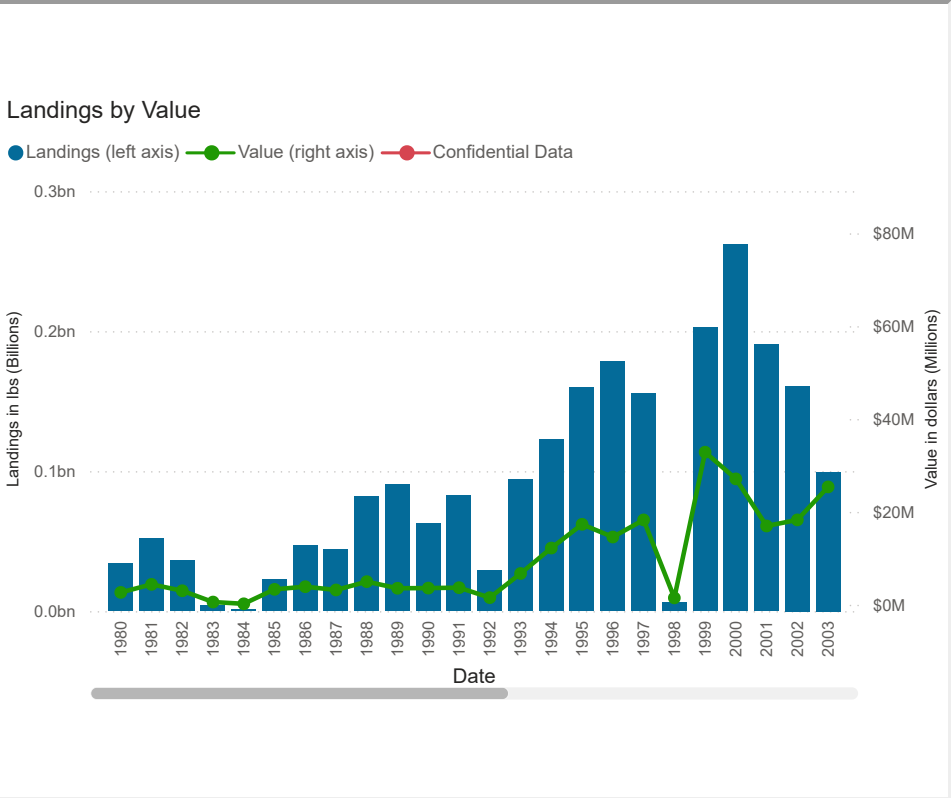


Figure 2-5. Market squid fishery landings (billion lbs) and value (million dollars) from the 1980 to 2023 calendar years (CDFW MLDS).

▼ View Detailed Description

Year	Landings (lbs)	Value
1980	33,917,681	\$2,656,171
1981	51,829,716	\$4,383,650
1982	35,953,254	\$3,014,499
1983	4,020,348	\$581,319
1984	998,902	\$202,119
1985	22,652,458	\$3,314,407
1986	46,908,612	\$3,887,269
1987	44,056,899	\$3,182,040
1988	82,082,351	\$4,973,508
1989	90,152,659	\$3,547,291
1990	62,714,435	\$3,584,777
1991	82,426,950	\$3,676,275
1992	28,902,796	\$1,532,615
1993	94,185,071	\$6,730,612
1994	122,372,050	\$12,214,104
1995	159,685,409	\$17,317,091
1996	178,095,778	\$14,587,217
1997	155,174,428	\$18,269,800
1998	6,381,504	\$1,475,732
1999	202,712,530	\$32,854,240
Total	4,914,233,091	\$1,152,291,359

2.4. Social and Economic Factors Related to the Fishery

Squid fishing supplements the income of many seine vessels that also participate in fisheries such as salmon, tuna, herring, and other CPS throughout California, Oregon, Washington, and Alaska. There continues to be a substantial number of market squid vessels with home ports outside California likely due to declines in some of these other fisheries. Historically, there have been territorial disputes between “local” and out-of-state fisherman. Some light boats participate in other local fisheries that do not use attracting lights such as herring, hook and line, and live bait.

The number of businesses purchasing squid had remained constant since the early 1980s, however, since the 1994-1995 season, the majority (80% or more) of the squid purchased was bought by nine or fewer dealers. In 2023, at least 80% of the catch was purchased by six dealers. Currently, the California squid industry is centered on global markets that have placed an increased demand upon California market squid. Vessels targeting squid usually have a relationship with one market from which they receive orders for specific amounts of squid (Figure 2-6). When demand or storage space is limited, fishing is limited regardless of squid availability (Pomeroy and Fitzsimmons 2001). The price paid to vessels depends on the market demand and

the availability of the resource. Historically, when volume was low, the price paid per ton was high, but the price is driven down when volume is high. Since 2000 the median ex-vessel price of market squid increased from \$0.10 to \$0.50 per pound and remained at \$0.50 per pound from 2016 to 2019. In 2020, the median ex-vessel price increased to \$0.60 per pound with an average price of \$1,160.00 per ton and remained at a median price of \$0.60 per pound through the 2023 calendar year.

Although the volume of squid produced by the state’s fleet is primarily dependent on the international market, the price paid for landings has influenced fishing effort, volume of squid caught, and size of squid caught. If squid processors reach capacity or supply exceeds demand, effort may decline due to lower economic incentive to fish. In recent years, international demand for market squid has remained constant with occasional size-based limits (Diane Pleschner-Steele pers. comm.). In the early years of the limited entry access fishery, there were instances of concerted price wars where the fishing fleet would strike for a higher price (Dianna Porzio pers. comm.). Crew wages are typically 50% of ex-vessel revenue after operating costs. Light boats are typically paid 20% of the catch value after costs (Lutz and Pendleton 2000).

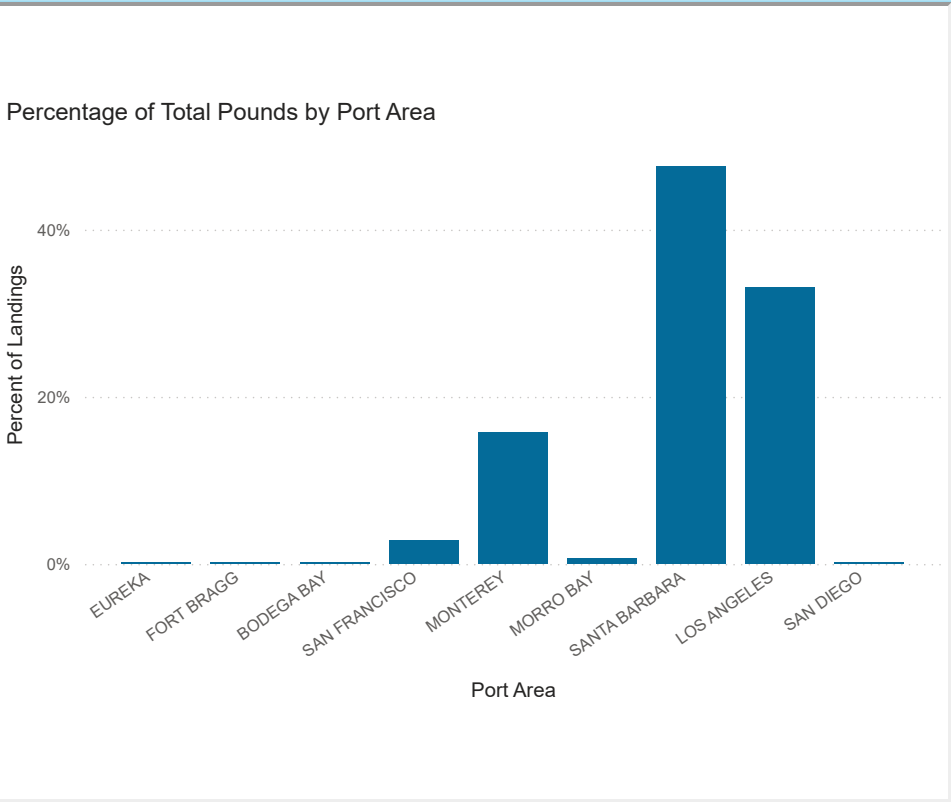



Figure 2-6. Market squid percentage (%) of total landings (by weight) by port complex from the 1980 to 2023 calendar years (CDFW MLDS).

▼ View Detailed Description

Port Area	% Total Pounds
▲ EUREKA	0.11%
FORT BRAGG	0.01%
BODEGA BAY	0.06%
SAN FRANCISCO	2.78%
MONTEREY	15.72%
MORRO BAY	0.61%
SANTA BARBARA	47.61%
LOS ANGELES	33.08%
SAN DIEGO	0.02%
Total	100.00%

 Related Links



 [Portal Home](#)

 [Overview](#)

 [Resources](#)

[Collapse All](#)

3. Management

3.1. Past and Current Management

To describe management measures clearly, summaries of regulatory and statutory language are provided below. Information on current fishing regulations is available on our [commercial regulations web page](#) and [ocean sport fishing web page](#). For the full text of all applicable laws and regulations, please refer directly to the relevant sections of the California Fish and Game Code and/or Title 14 of the California Code of Regulations.

The market squid fishery was primarily an open-access fishery prior to 1998. Concern over growing harvest rates and a rapid increase in the number of vessels entering the fishery prompted the implementation of industry sponsored legislation in 1997. The following year, the Legislature passed Senate Bill (SB) 364 (Sher), which was incorporated into Fish and Game Code (FGC) §8420-8429.7. The Legislature deemed it necessary to adopt and implement fishery management measures that sustain both the squid population and marine life that depends on squid. SB 364 required the purchase of an annual permit to land or to attract squid by using light for purposes of commercial harvest. It also placed a moratorium on the number of vessels in the fishery, established a permit for market squid vessels and light boats, and initiated a 3-year study to assess conservation and management of the fishery (CDFG 2005). During this study, researchers and the Department explored several science-based methods for developing fishery management strategies but determined that traditional assessment methods used to estimate biomass were not applicable to market squid.

In April 2001, the Department, in collaboration with scientists and stakeholders, submitted a status report with recommendations for market squid conservation and a future management plan (CDFG 2001). During this time, the Legislature delegated management authority for the squid fishery to the Commission and required the adoption of the MSFMP. The goals of the MSFMP as dictated by the MLMA are: (1) to manage the market squid resource to ensure long term resource conservation and sustainability; and (2) to develop a framework for management that will be responsive to environmental and socioeconomic change (CDFG 2005). The initial analysis and design phases for the MSFMP began in January 2001 with contributions from the Department, NOAA, university researchers, and industry representatives. Since its completion in 2005, the MSFMP has remained the primary management tool for the market squid fishery as directed by §149, Title 14, CCR (Table 3-1.).

Market squid is also included under federal management through the CPS FMP implemented in 2001, though management in the CPS FMP is delegated to the State. The CPS fishery includes market squid and four finfish species (Pacific sardine, Pacific mackerel, northern anchovy, and jack mackerel) as a fishery management unit. CPS finfish are pelagic because they generally occur or are harvested above the thermocline in the upper mixed layer (PFMC 2023a). Market squid are included in this complex because they are similarly fished as aggregations. The CPS FMP required that Maximum Sustainable Yield (MSY) be established for all species in

the plan (CDFG 2005). Setting MSY for market squid has proven problematic because an accurate biomass has yet to be determined. Hence, the Pacific Fishery Management Council (PFMC) approved the use of egg escapement as a proxy for MSY for the market squid fishery. Details of this method are summarized below and described in section 4.1 of the MSFMP. The CPS FMP requires Status Determination Criteria and management reference points (e.g., Acceptable Biological Catch (ABC) and Annual Catch Limit (ACLs)) for all fishery management unit species. Market squid are exempt from ACL requirements because their life cycle is less than 1 year.

Table 3-1. Summary of market squid regulations from 1959 to 2023 (Reproduced and updated from Table 2-13 in the MSFMP 2005). All information included in this table is summarized and not to be considered explicit language for each regulation.

Date	Bill # (Author) or Title Section	Management Action
1959	§8397	It is unlawful to use any artificial light to lure or attract squid in Districts 16 and 17. This section applies to all artificial lights except those lights necessary for the usual operation of a vessel not used to lure or attract, or intended to lure or attract, squid.
1983	AB 513 (Farr)	Authorizes the Commission to adopt regulations specifying the days of the week and times of the day when squid may be taken north of Point Conception.
1984	§149, Title 14, CCR	The Commission adds CCR Title 14 §149, to prohibit any vessel, using or possessing a roundhaul net in Districts 16 and 17, from taking Market Squid between noon Friday and midnight Sunday and between noon and midnight on any Monday through Thursday.
1987	AB 123 (Farr)	Allows the use of lights to attract squid in District 17.
1988	AB 4055 (Farr)	Allows the use of lights to attract squid in District 16.
1989	SB 1080 (Mello)	Allows the use of all roundhaul nets, including purse seine and half-purse seine nets, to take squid in all portions (including the southernmost portion) of District 16, subject to the same area and season restrictions previously in effect for lampara nets.
1993	AB 14 (Houser)	Restricts the use of attracting lights in District 10.
1993	SB 1030 (Thompson)	A landing tax of \$0.0019/pound (lb) is imposed.

Date	Bill # (Author) or Title Section	Management Action
1997	SB 364 (Sher)	Authorizes the take of Market Squid north of Pt. Conception between noon on Sunday and noon on Friday. Requires a permit for the take of squid with a dip, purse seine, or lampara net for commercial purposes. Requires a permit to attract squid by light from a vessel. Establishes a fee for a commercial squid light boat owner’s permit. Allows for transfer of vessel or light boat owner’s permits under certain conditions. A 3-yr moratorium on commercial squid vessel permits is established; the possession of a permit from the previous year is required in order to renew.
1998	AB 1928 (Morrow)	No permit is necessary, nor is a landing tax imposed, for the take of live bait. Drum seines and other roundhaul nets excepted from prohibition of rings along lead line and pursing of net bottoms.
1998	AB 1241 (Keeley)	MLMA passes.
2000	§149, Title 14, CCR	Amendment – Prohibits commercial take of Market Squid between noon on Friday and noon on Sunday from Pt. Conception south to the US-Mexico border. Requires commercial squid vessels and light boats to maintain logbooks detailing fishing/lighting activities.
2000	§149, Title 14, CCR	Amendment – Vessels fishing or lighting for squid are restricted to using no more than 30,000 watts of light. Each vessel fishing or lighting for squid must shield the entire filament of each light, directing the light downward, or the vessel must keep the illumination completely submerged underwater.
2000	SB 1544 (Sher)	Establishes a \$400 fee for a commercial Market Squid vessel permit. Extends the sunset date for SB364 to January 1, 2004. Extends existing duties imposed on the Department and the Commission and makes an appropriation.

Date	Bill # (Author) or Title Section	Management Action
2001	SB 209 (Sher)	Requires the Commission to adopt the MSFMP by 31 Dec 2002, after consideration and public hearings. Requires the Commission to establish fees for commercial Market Squid vessel permits and commercial squid light boat owner’s permits annually commencing April 1, 2003. Prohibits each person who is issued a commercial squid light boat owner’s permit from selling, trading or transferring the permit to another person. Provides that specified provisions will become inoperative upon the adoption by the Commission of a MSFMP and the adoption of implementing regulations and will be repealed 6 months thereafter.
2001	§149, Title 14, CCR	Proposed regulatory changes establish catch limits in order to protect the squid resource and manage the fishery sustainably; a harvest guideline of 125,000 tons was selected.
2001	§159, Title 14, CCR	Market Squid is included under Commercial Fishing for CPS.
2003	§1.39, Title 14, CCR	Market Squid is included in CPS under General Provisions and Definitions.
2004	§149, Title 14, CCR	Establishes a seasonal (April 1 to March 31 of the following year) catch limit of 118,000 tons (107,047 mt) for commercial catch of Market Squid.
2004	§149, Title 14, CCR	Continues closures between 1200 hours (noon) on Friday and 1200 hours (noon) on Sunday of each week from the U.S.-Mexico border to the California-Oregon border. When the commercial fishery is closed, squid may be taken for commercial purposes only incidentally to the take of other target species or for live bait.
2004	§149, Title 14, CCR	Prohibits take of Market Squid for commercial purposes using attracting lights in all waters of the Gulf of the Farallones National Marine Sanctuary. This regulation also applies to vessels pursuing squid for live bait purposes.
2004	§149, Title 14, CCR	Requires any operator of a commercial Market Squid vessel or permit holder of a commercial Market Squid permit to submit an accurate record of his/her squid fishing, lighting, or brailing activities on market squid logbooks provided by the Department, as appropriate to the type of fishing activity.

Date	Bill # (Author) or Title Section	Management Action
2004	§149, Title 14, CCR	Prohibits attracting squid by light except as authorized by RA Market Squid Fishery permits. This regulation does not apply to seine skiffs of a permitted vessel or to vessels pursuing squid for live bait purposes only.
2004	§149, Title 14, CCR	Allows incidental take of Market Squid when fishing for other target species. This volume shall not exceed 2 tons per trip.
2004	§149, Title 14, CCR	Prohibits the take of live bait for purposes other than use as live bait or sale as live bait.
2005	§149.1, Title 14, CCR	Establishes a market squid fishery RA program.
2005	§149.3, Title 14, CCR	Allows the commission to issue three-Non-Transferable Market Squid Vessel Permits for purposes of developing a squid fishery in areas previously not utilized for squid production.
2014	§149, Title 14, CCR	Allows incidental take of Market Squid when fishing for other target species. This volume shall not exceed 2 tons per trip or 10% of the total volume by weight of all fish landed of possessed.
2022	§149.3, Title 14, CCR	Repealed.

3.1.1. Overview and Rationale for the Current Management Framework

The MSFMP was designed to allow the Commission to make changes to regulations without the need for a full amendment to the FMP and provides the Commission specific guidelines for making management decisions. The MSFMP framework structure is consistent with management of market squid by the PFMC outlined in the CPS FMP. To meet the standards of the MLMA for adaptive management, the MSFMP establishes a hierarchical framework within which adjustments to the management of the market squid fishery can be made in a responsible and timely manner. The Commission may take four general types of actions within the framework of the MSFMP: (1) FMP amendment, (2) full rulemaking, (3) notice action, and (4) prescribed action. A Full Rulemaking process, pursuant to the Administrative Procedures Act, is required for any changes to management measures that are discretionary in nature. This typically requires at least three Commission meetings. The first meeting includes commission review of the issues and publication of a notice for public comment with the intent to adopt regulations at a later meeting. At the second meeting, the Commission reviews the proposed measures and alternatives in detail and receives public comments. At the third meeting, the commission adopts the final rules and submits this to the Office of Administrative Law for procedural review prior to publication and implementation.

The market squid fishery operates through a limited entry program that includes provisions for initial entry into the fleet, types of permits, permit fees, and the potential for permit transferability. The intent of restricting access to the fishery for the market squid resource was to balance the need for viable economic harvest with the need to protect the squid resource. Additional fishery control rules were established to promote a more sustainable fishery, prevent overfishing, provide a protocol for managing market squid fishing, and reduce impacts to seabirds. These include a seasonal-catch limit to prevent the fishery from over-expanding; weekend closures to provide for periods of uninterrupted spawning; gear regulations regarding light shields and wattage; monitoring programs designed to evaluate the impact of the fishery on the resource; and establishment of a seabird closure restriction the use of attracting lights for commercial purposes in any water of the Gulf of the Farallones National Marine Sanctuary (§149, Title 14, CCR). Setting a seasonal-catch limitation was intended to curtail growth of the fishery should market demand allow for such expansion. Catch trends indicate that the market squid resource is quite robust and able to sustain historic catch levels (CDFG 2005). Since the implementation of the MSFMP, additional spatial closures have been established through the Marine Life Protection Act (MLPA) process of developing an MPA network (see section 3.1.2.1.8).

An MSY model is often used to determine catch limits, but a proxy or substitute for MSY may be used where scientific information is inadequate. Due to a lack of adequate data to make a mathematical MSY determination, the MSFMP uses a proxy for MSY based on historical landings. This guidance was taken from NOAA Fisheries (Restrepo et al. 1998). Restrepo et al. (1998) proposed that in data-poor situations, such as the market squid fishery, it is reasonable to use historical average catch from a period when there is no qualitative or quantitative evidence of declining abundance. Using this methodology, the Commission established a statewide seasonal catch limit of 118,000 tons using a 3-year average catch from the 1999-2000 to 2001-2002 fishing seasons (CDFG 2005). The ability of the market squid fishery to support landings of greater than 100,000 tons in the 1999-2000 season with repeat landings of the same magnitude in the following two seasons suggests that the stock is robust enough to withstand this level of landings (CDFG 2005).

This approach assumes that the stock is above the average spawning biomass to sustain MSY and uses a multiplier of 1.0. A multiplier of 1.0 was chosen to be most appropriate for market squid as opposed to more precautionary Optimum Yield (OY) multipliers due to its short lifespan. This approach to risk management reduces the chance of inadvertent overfishing when little is known about the status of the stock (CDFG 2005). Because exploitation rates are strongly influenced by availability, market demand, and processing capacity, standardized catch-effort data are not reliable proxies for market squid population abundance (Dorval et al. 2013).

3.1.1.1. Criteria to Identify When Fisheries Are Overfished or Subject to Overfishing, and Measures to Rebuild ▼

Because no biomass estimate exists for market squid, it is not possible to define an overfished condition for this species. Setting a mathematical MSY for market squid is impractical for the squid fishery because biological data are inadequate, and landings are strongly influenced by availability and market demand rather than effort. Overfishing is defined as harvest of squid occurring at a time when either the egg escapement threshold is not being met, or when catches are exceeding specified allowable levels and that these catches may not be sustainable (CDFG 2005).

Consequently, the egg escapement method is used as a proxy for MSY/OY. Egg escapement is the number (or proportion) of a female squid's potential lifetime fecundity that she is able to spawn, on average, before being taken in the fishery. The MSY Control Rule for market squid is founded generally on conventional spawning biomass "per recruit" model theory (Gabriel et al. 1989; Macewicz et al. 2004). Specifically, the MSY Control Rule for market squid is based on evaluating levels of egg escapement associated with the exploited population. The estimates of egg escapement are evaluated in the context of a "threshold" that is believed to represent a minimum level that is considered necessary to allow the population to maintain its level of abundance into the future (e.g., allow for "sustainable" reproduction year after year) (PFMC 2023a).

The egg escapement approach can be used to evaluate the effects of fishing mortality on the spawning potential of the stock, and to examine the relation between the stock’s reproductive output and candidate proxies for the fishing mortality that results in MSY (F_{MSY}). The egg escapement model is not used as a real-time tool for management, but rather a method of assessing the effectiveness of management, which is an appropriate use in regard to the accuracy of the model (Emmanis Dorval pers. comm).

This threshold is currently set to a level of egg escapement of at least 30%. Therefore, the Overfishing Fishing Limit and ABC for market squid are a F_{MSY} proxy resulting in egg escapement $\geq 30\%$ (Table 3-2). The egg escapement model, as a proxy for MSY, was intended to be a temporary measure until an acceptable biomass estimate could be determined for market squid. Since an accurate biomass estimate has not yet been developed for market squid, NOAA and the Department continue to improve and refine the egg escapement method (Dorval et al. 2024).

Table 3-2. Summary of statewide market squid proportional egg escapement from the 2014-2015 to 2023-2024 fishing seasons. Means are computed across three regions and weighted based on the number of samples collected per region across four quarters (Section 1.2.1). Fishing mortality rates are based on a natural mortality of 0.15 and a constant egg laying rate of 0.45 (Dorval et al. 2013). An "*" indicates that sampling was impacted by the COVID-19 pandemic and/or staffing shortages, and thus statewide mean proportional egg escapement could not be computed adequately. Former results were modified due to additional data cleaning (Dorval et al. 2024).

Fishing Season	Number of Samples	Proportion of Vessel Landings Sampled	Mean Proportional Egg Escapement
2014 - 2015	94	0.026	0.302
2015 - 2016	97	0.066	0.320
2016 - 2017	52	0.020	0.266
2017 - 2018	134	0.035	0.223
2018 - 2019	130	0.062	0.359
2019 - 2020	72	0.050	0.449
2020 - 2021	*67	*0.032	*0.196
2021 - 2022	121	0.034	0.292
2022 - 2023	*46	*0.018	*0.238
2023 - 2024	71	0.04	0.310

3.1.1.2. Past and Current Stakeholder Involvement

The Department’s initial status report, submitted in 2001, was developed through cooperative efforts of scientists, fishing industry representatives, and stakeholders (CDFG 2001). As part of this process, The Squid Fishery Advisory Committee (SFAC), made up of resource stakeholders, and a Squid Research Scientific Committee (SRSC), consisting of many of the world’s leading squid fishery scientists, were established to advise the Department Director (Director) on recommendations for squid conservation and management and to provide input on the development of research protocols. These committees were disbanded after the final MSFMP was implemented.

In 2004, the non-profit CWPA was established with the mission to “(1) protect and maintain access to wetfish resources in California; (2) promote sustainable production of wetfish resources, with a focus on supporting collaborative research, and (3) facilitate communication within and outside California’s wetfish industry (CWPA 2019).” The CWPA Board of Directors consists of processors, vessel owners, and vessel operators. Some of these individuals act as representatives on the CPS Advisory Subpanel to the PPMC. CWPA has partnered with the SWFSC and the Department on multiple research projects including, but not limited to, chartering vessels to tow bongo nets near spawning grounds to collect paralarvae and mapping local squid concentrations in relation to environmental indices.

3.1.2. Target Species

3.1.2.1. Limitations on Fishing for Target Species

3.1.2.1.1. Catch

The seasonal-catch limit for market squid is 118,000 tons. The squid fishery runs year-round on an April 1 through March 31 fishing season. The Department actively tracks landings for the fishery to determine if and when the seasonal-catch limit will be reached. Effective closure dates are publicly announced by the United States Coast Guard on very high frequency radio channel 16 between the hours of 2200 and 2400 (midnight). When the seasonal-catch limit has been reached and the commercial fishery is closed, squid may be taken for commercial purposes only incidentally to the take of other target species or for live bait. The incidental allowance is restricted to 2 tons per trip and 10% of the total volume by weight of all fish landed or possessed on a vessel (§149, Title 14, CCR). market squid will school with CPS finfish and mixed landings are fairly common. An incidental allowance following a seasonal closure prevents squid and target species from being discarded under these circumstances.

3.1.2.1.2. Effort

Limiting entry to the commercial fishery is the major effort restriction. This includes provisions for initial entry into the fleet, types of permits, permit fees, and permit transferability. Prior to 2014, vessels landing less than 2 tons of squid on a per trip basis were not required to possess a limited entry market squid permit. This directed allowance was removed in 2014 to prevent directed fishing without a market squid permit and continued fishing after the fishing season was closed (§149, Title 14, CCR). Landing of market squid beyond the jurisdiction of the state of California is not affected by limited entry access requirements. Recreational fishing for market squid does not require a limited entry permit, nor does fishing for squid for use as live bait.

A weekend closure prevents fishing activity from occurring from noon on Friday to noon on Sunday. There are no additional restrictions on number of trips, tonnage per trip, or days at-sea, other than those self-imposed by markets.

3.1.2.1.3. Gear

Major gear regulations control the use of lights in the market squid commercial fishery. Regulations require that each vessel fishing for squid or lighting for squid will use a maximum of 30,000 watts at any time (§149, Title 14, CCR). As part of these restrictions, each vessel must reduce the light scatter of its fishing operations by shielding the entire filament of each light used to attract squid. The illumination must also orient directly downward, and the lower edges of shields are required to be parallel to the deck of the vessel.

3.1.2.1.4. Time

The sole time restriction for the market squid commercial fishery is a weekend closure. Market squid may not be taken for commercial purposes from 1200 hours (noon) Friday to 1200 hours (noon) Sunday of each week (§149, Title 14, CCR). This extends from the U.S.-Mexico border to the California-Oregon border. The weekend closure allows for 2 days of uninterrupted spawning in areas where squid are being harvested. This provides protection to the resource by allowing spawning and ensuring egg cases are deposited without disturbance from the fishery. The use of attracting lights for commercial harvest is also prohibited on weekends. This measure spreads the spawning escapement throughout the year, unlike a seasonal quota or closure. Prohibiting fishing activity on the weekends was also intended to alleviate conflict with other interest groups (e.g., divers, recreational fishermen, or commercial passenger fishing vessels) operating in the same area (CDFG 2005).

3.1.2.1.5. Sex

There are no limitations on the sex of market squid taken commercially or recreationally.

3.1.2.1.6. Size

There are no size restrictions on market squid taken commercially or recreationally.

3.1.2.1.7. Area

Squid may not be taken using attracting lights in all waters of the Gulf of the Farallones National Marine Sanctuary at any time. This restriction was established in 2004 and designed to protect not only seabirds that breed and rear on the Farallon Islands, but also protect a large forage area (3,250 square kilometers (km²) (1,255 square miles (mi²) in the waters surrounding the islands from light disturbance and interactions with squid vessels.

Additionally, there are area restrictions for round haul vessels, those that employ the use of purse seine, drum seine, and lampara net gear to commercially harvest squid. In the inland waters of Districts 1, 2, and 3 which encompass much of the land mass of California, round haul nets may not be possessed on any boat except in that part of District 3 lying within the boundaries of the Moss Landing Harbor District, where round haul or any other type of nets may be possessed on any boat, and except in that part of District 2 lying within Marin County (FGC §8751).

Purse and round haul nets may not be used at any time from June 1 to September 10 each year, in that portion of District 20 from a line extending 3 nautical mi east magnetically from the extreme easterly end of Santa Catalina Island southerly to a line extending 3 nautical mi southeasterly magnetically from the United States government light on the southeasterly end of Santa Catalina Island (FGC §8755). District 20 encompasses Santa Catalina Island and the portion of state waters within 3 nautical mi of the island’s coastline on the northerly, easterly, and southerly side of the island, lying between a line extending 3 nautical mi west magnetically from the extreme westerly end of Santa Catalina Island to a line extending 3 nautical mi southwest magnetically from the most southerly promontory of China Point (FGC §11030). These regulations exclude fishing for use or sale of squid for live bait, though in Districts 19A and 19B, round haul nets may not be used within 750.0 ft (228.6 m) of any public pier (FGC §8757). District 19A includes ocean water and tidelands to highwater mark between Malibu Point and Rocky Point (Palos Verdes Pt.), excluding all rivers, streams, and lagoons (FGC §11028). District 19B includes ocean waters and tidelands northerly of the following line: beginning at the west end of the San Pedro Breakwater, thence in an extended line following the axis of the San Pedro, the middle, and Long Beach breakwaters to the east end of the latter, then to the outer end of the west jetty of Anaheim Bay (FGC §11029).

3.1.2.1.8. Marine Protected Areas

Pursuant to the mandates of the Marine Life Protection Act (Fish and Game Code (FGC) §2850), the Department redesigned and expanded a network of regional MPAs in state waters from 2004 to 2012. The resulting network increased total MPA coverage from 2.7% to 16.1% of state waters. Along with the MPAs created in 2002 for waters surrounding the Santa Barbara Channel Islands, California now has a statewide scientifically-based, ecologically-connected network of 124 MPAs. The MPAs contain a wide variety of habitats and depth ranges.

MPAs function as areas of uninterrupted spawning for market squid and as forage reserves for the many species that consume market squid. When designing the current MPA Network, the Department and advisory bodies considered both squid spawning habitat and historic ecological reserves where squid spawning was known to occur. Approximately 13% of documented market squid spawning grounds (e.g., soft bottom or unknown habitat up to 100 m (328.1 ft) deep (Zeidberg et al. 2011b)) in California are now within no-take MPAs (CDFW unpublished data). This habitat estimate is singularly based on bathymetry models and does not consider other environmental factors related to EFH for market squid such as temperature ranges documented by Zeidberg et al. 2011b. The relative contribution of these MPAs to market squid spawning success and recruitment is not known (Van Diggelen 2017).

In addition to the no-take MPAs, limited take State Marine Conservation Areas (SMCAs) also protect squid. Fishing for squid using round haul net is allowed in the Bodega Head SMCA, the Pillar Point State SMCA, Point Dume SMCA, Abalone Cove SMCA, Farnsworth Offshore SMCA, and Dana Point SMCA, but not more than 5% by weight of any commercial pelagic finfish or market squid catch landed or possessed shall be other incidentally taken species in this SMCA (§632, Title 14, CCR). In the Point Dume SMCA, Abalone Cove SMCA, Farnsworth Offshore SMCA, and Dana Point SMCA, specifically, commercial take with brail gear and light boat is also allowed (§632, Title 14, CCR).

3.1.2.2. Description of and Rationale for Any Restricted Access Approach

The goal of the limited entry program was to produce a moderately productive and specialized fleet. Limited entry programs are designed to match fishing effort with the sustainability of the resource and to address economic issues associated with excess harvest capacity in open access fisheries. Specifically, the Commission’s purposes for restricting access or entry to a fishery are described as: (1) promote sustainable fisheries; (2) provide for an orderly fishery; (3) promote conservation among fishery participants; and (4) maintain the long-term economic viability of fisheries. Fisheries characterized by excess harvesting capacity are described as overcapitalized in terms of the number of vessel and the amount of gear and equipment

devoted to harvesting. If the fishery becomes overcapitalized, harvesting costs increase while catches remain the same. This situation represents an economically inefficient use of society's productive resources and causes several problems for managers and the fishing industry when abundance and demand decline, and catches are reduced (CDFG 2005). At the time of its conception, the limited entry program for the market squid fishery was widely supported by most members of the SRSC, the SFAC, and other squid fishing industry and conservation groups, with some processors and fisherman in opposition.

As directed under the MSFMP limited entry program, the Commission adopted a vessel-based capacity goal of 55 market squid vessel permits, 34 light boat permits, and 18 market squid brail permits, with the intent for non-transferable permits to decline through attrition. The fleet size at this time was 165 squid vessels and 40 light boats. The MSFMP defines the fleet capacity goal as an optimal number of vessels where the number of vessels matches the available squid resource (CDFG 2005). Eligibility was determined after purchase of a permit in the initial 1998-1999 season. Any licensed individual could participate during this initial year if the fisherman presented evidence that he or she had been a licensed California commercial fisherman for at least 20 yr and had participated in the market squid fishery. There were three components to the Commission's policy to determine qualification: (1) initiating the program would not increase the recent level of fishing effort, (2) initial issuance of permits would only be to the current owners of qualifying vessels and, (3) to meet the needs of a fishery, it may be desirable to modify the approach of giving permits to current owners of qualifying vessels (CDFG 2005).

3.1.3. Bycatch

3.1.3.1. Amount and Type of Bycatch (Including Discards) ▼

Bycatch is defined as "fish or other marine life that are taken in a fishery but which are not the target of the fishery" (FGC §90.5). Bycatch includes "discards," defined as "fish that are taken in a fishery but are not retained because they are of an undesirable species, size, sex, or quality, or because they are required by law not to be retained" (FGC §91). The bycatch also may include species that, while not the target, are desirable and thus are retained as incidental catch. The term "Bycatch" does not always imply a negative impact.

Bycatch is minimal in the commercial market squid fishery, although it cannot be avoided entirely (Table 3-2). Salmon (*Oncorhynchus* spp.), steelhead (*Oncorhynchus mykiss*), striped bass (*Morone saxatilis*), or American shad (*Alosa sapidissima*) may not be taken with purse or round haul nets (FGC §8756). It is also unlawful to use any purse seine or round haul net to take yellowtail, barracuda, or white seabass (FGC §8623). Pacific bonito may not be smaller than 24 in (61 centimeters (cm)) fork length or five pounds (lb) by weight except that round haul loads may contain 18% or less by number of Pacific bonito smaller than the minimum size (FGC §8377).

There have been very few interactions identified between the California market squid fishery and threatened or endangered marine species of birds and mammals (Table 3-2). The market squid fishery is classified as a Marine Mammal Protection Act Category III fishery in terms of impact on marine mammal stocks. This means annual mortality and serious injury of a stock in a given fishery is less than or equal to 1% of the Potential Biological Removal level (e.g., a remote likelihood of or no known incidental mortality and serious injury to marine mammals). According to the NOAA List of Fisheries for 2023, documented interactions in the California squid purse seine fishery include California sea lion, long-beaked common dolphin risso's dolphin, and short-beaked common dolphin (NOAA 2023).

From data gathered through the Department's dockside sampling program, 1,031 of 1,521 samples (68%) collected between January 2010 and December 2020 contained incidentally caught fish and/or invertebrates, excluding other CPS and squid egg cases (Table 3-3). Approximately 25.8% of sampled landings from July 2010 to December 2020 contained squid egg cases. Incidental catches of squid egg cases and other species increase in the squid fishery when the nets are set in shallower water (less than 40.0 m (131.2 ft)), where bottom contact may occur (Lutz and Pendleton 2001).

The species with the highest average frequency of occurrence from 2019 to 2023 include Pacific sardine, unspecified kelp, Pacific mackerel, jack mackerel, and unspecified jellyfish respectively (Table 3-3). Less than 2% of the sampled landings contained species that are prohibited from being landed (e.g., barracuda, salmon, and white seabass). Most commercial fishing for CPS finfish and market squid takes place south of Pigeon Point. The potential for taking salmon exists in this area, but diminishes south of Monterey, California (37° N latitude) (PFMC 2010).

Table 3-3. Preliminary catch summary for vessels targeting market squid from NMFS-SWR CPS pilot observer program including live, dead, and unknown bycatch, 2004 to 2008 (Reproduced from PFMC 2011).

Species	Target Catch	Incidental Catch	Live	Dead	Unknown
Squid	1274 mt	--	28 mt	350 lbs	2 mt
Anchovy	--	100 lbs	120 lbs	--	--
Jack Mackerel	--	2 mt	18 lbs	2 lbs	--
Pacific Mackerel	--	20 mt	20 mt	180 lbs	1 lb
Sardine	--	12 mt	13 mt	1077 lbs	3 lbs
Spanish Mackerel	--	20 lbs	--	--	--
Bat Ray	--	--	53	--	1
Bat Star	--	--	1	--	--
Blue Shark	--	--	2	--	--
Common Mola	--	--	1	--	--
Pelagic Stingray	--	--	60	--	--
Pacific Butterfish	--	19	--	--	1
Sunstar	--	30	4	--	--

Species	Target Catch	Incidental Catch	Live	Dead	Unknown
Squid Eggs	--	--		--	505 lbs
Lobster	--	--	3	--	--
Brittle Star	--	--	--	3000	--
Unid. Batfish	--	--	--	2 lbs	--
Unid. Crab	--	1	1	--	93
Unid. Croaker	--	3	2	16 lbs	
Unid. Flatfish	--	1	1	6	2
Unid. Jellyfish	--	4	--	--	--
Unid. Mackerel	--	2 lbs	102 lbs	--	--
Unid. Octopus	--	1	--	--	--
Unid. Rockfish	--	1	1	4	--
Unid. Ray	--	--	4	--	1
Unid. Sanddab	--	4	3	--	4
Unid. Sea star	--	1	--	--	--
Unid. Sea slug	--	--	--	--	21
Unid. Scorpionfish	--	1	--	--	--
Unid. Surfperch	--	--	--	3	--
Unid. Skate	--	3	--	1	--
Unid. Smelt	--	49	--	--	--
Unid. Stingray	--	9	17	--	--

Species	Target Catch	Incidental Catch	Live	Dead	Unknown
Unid. Shark	--	--	--	--	1
Thresher Shark	--	1	--	--	--
CA Sea Lion	--	--	98	--	--
Harbor Seal	--	--	3	--	--
Common Dolphin	--	--	--	1	--
Unid. Gull	--	--	16		

Table 3-4. Percent frequency of occurrence of bycatch in observed loads of California market squid from 2019 to 2023. Table values represent the presence of a species in observed loads for that year. Any species with fewer than 1% occurrence during the entire timeframe is not listed. A “-” indicates that no individuals of that species were observed during that year. An “*” indicates data a currently under review (CDFW Market Squid Port Sampling Database).

Category and Common Name	Scientific name	2019	2020	2021	2022	2023
Finfish Anchovy, northern	<i>Engraulis mordax</i>	25.00	31.33	31.43	19.51	8.06
Barracuda, California	<i>Sphyraena argentea</i>	2.78	2.41	1.43	0.81	-
Bass, kelp	<i>Paralabrax clathratus</i>	1.85	1.20	0.71	-	1.61
Blacksmith	<i>Chromis punctipinnis</i>	-	-	0.71	2.44	3.23
Bonito, Pacific	<i>Sarda lineolata</i>	2.78	2.41	0.71	1.63	1.61
Butterfish (Pacific pompano)	<i>Peprilus simillimus</i>	16.67	16.87	13.57	17.07	3.23
Croaker, White (kingfish)	<i>Genyonemus lineatus</i>	5.56	6.00	5.70	6.50	-

Category and Common Name	Scientific name	2019	2020	2021	2022	2023
Fish, unspecified	--	-	1.20	7.10	1.60	1.60
Flatfish, unspecified	--	17.59	14.50	13.60	8.10	4.80
Flying fish, California	<i>Cheilopogon pinnatibarbatus californicus</i>	0.93	-	1.40	5.70	3.20
Halfmoon	<i>Medialuna californiensis</i>	-	2.40	0.70	-	6.50
Halibut, California	<i>Paralichthys californicus</i>	7.41	4.80	2.10	10.60	1.60
Herring, Pacific	<i>Clupea pallasii</i>	1.85	-	2.10	1.60	-
Herring, red-eye round	<i>Etrumeus teres</i>	11.11	1.20	2.90	4.10	4.80
Jacksmelt	<i>Atherinopsis californiensis</i>	18.52	37.4	30.00	24.40	16.00
Mackerel, jack	<i>Trachurus symmetricus</i>	47.22	33.70	27.90	49.60	37.10
Mackerel, Pacific (chub)	<i>Scomber japonicus</i>	52.78	48.20	21.40	53.70	58.10
Midshipman, unspecified	<i>Porichthys spp.</i>	2.78	-	-	1.60	1.60
Midshipman, plainfin	<i>Porichthys notatus</i>	3.70	14.50	11.40	6.50	-
Midshipman, specklefin	<i>Porichthys myriaster</i>	-	-	2.10	1.60	1.60
Pacific sardine	<i>Sardinops sagax</i>	74.07	71.10	58.60	67.50	54.80
Rockfish, unspecified	<i>Sebastes spp.</i>	2.78	1.20	3.60	3.30	1.60

Category and						
Common Name	Scientific name	2019	2020	2021	2022	2023
Rockfish, bocaccio	<i>Sebastes paucispinis</i>	0.93	3.60	2.10	1.60	-
Sablefish	<i>Anoplopoma fimbria</i>	-	1.20	0.70	4.90	-
Salmon, Chinook	<i>Oncorhynchus tshawytscha</i>	1.85	6.00	0.70	-	-
Sanddab, unspecified	<i>Citharichthys spp.</i>	6.48	1.20	3.60	3.30	-
Sanddab, longfin	<i>Citharichthys xanthostigma</i>	0.93	1.20	-	-	1.60
Sanddab, Pacific	<i>Citharichthys sordidus</i>	11.11	27.70	27.10	21.10	1.60
Sanddab, speckled	<i>Citharichthys stigmaeus</i>	4.63	3.60	4.30	4.90	1.60
Scorpionfish, California	<i>Scorpaena guttata</i>	9.26	9.60	2.90	16.30	17.70
Sculpin, staghorn	<i>Leptocottus armatus</i>	-	1.20	1.40	3.30	-
Smelt, night	<i>Spirinchus starksi</i>	-	3.60	2.10	-	-
Sole, English	<i>Pleuronectes vetulus</i>	4.63	6.00	7.90	8.90	-
Sole, sand	<i>Psettichthys melanostictus</i>	1.85	1.20	2.10	6.50	-
Sunfish, ocean	<i>Mola mola</i>	-	3.60	0.70	4.90	-
Topsmelt	<i>Atherinops affinis</i>	1.85	4.80	0.70	0.80	-
Turbot, unspecified	<i>Pleuronectidae</i>	1.85	-	2.10	1.60	-

Category and Common Name	Scientific name	2019	2020	2021	2022	2023
Turbot, hornyhead	<i>Pleuronichthys verticalis</i>	3.70	9.60	8.60	8.90	1.60
Wrasse, rock	<i>Halichoeres semicinctus</i>	-	-	-	0.80	1.60
Elasmobranchs Ray, bat	<i>Myliobatis californica</i>	3.70	-	2.90	10.60	9.70
Ray, Pacific electric	<i>Tetronarce californica</i>	8.33	13.30	9.30	8.90	-
Shark, horn	<i>Heterodontus francisci</i>	6.48	-	2.10	2.40	-
Skate, big	<i>Raja binocularata</i>	2.78	6.00	-	3.30	-
Skate, California	<i>Raja inornata</i>	2.78	1.20	1.40	0.80	-
Skate, unspecified	<i>Rajidae</i>	-	1.20	2.10	0.80	1.60
Stingray	<i>Dasyatidae</i>	0.93	1.20	2.10	-	-
Invertebrates Anemones, unspecified	<i>Anthozoa</i>	-	3.60	0.70	0.80	-
Crab, unspecified	<i>Cancer spp.</i>	6.48	12.10	7.90	7.30	3.20
Crab, claws	<i>Cancer spp.</i>	2.78	2.40	5.00	2.40	-
Crab, decorator	<i>Bivalvia</i>	0.93	2.40	-	0.80	-
Crab, Dungeness	<i>Metacarcinus magister</i>	5.56	9.60	17.10	7.30	-
Crab, red rock	<i>Cancer productus</i>	5.56	3.60	5.70	4.10	-
Crab, rock unspecified	<i>Cancer spp.</i>	0.93	2.40	1.40	2.40	-

Category and Common Name	Scientific name	2019	2020	2021	2022	2023
Crab, shells	--	8.33	15.70	12.10	8.90	-
Crab, swimming unspecified	--	12.04	7.20	2.10	0.80	-
Jellyfish, unspecified	<i>Hydrozoa</i>	35.19	49.4	37.9	26.80	9.70
Lobster, California spiny	<i>Panulirus interruptus</i>	1.85	6.0	0.70	1.60	1.60
Mussel, unspecified	<i>Mytilus spp.</i>	6.48	1.20	2.10	0.80	6.50
Octopus, unspecified	<i>Octopus spp.</i>	2.78	2.40	1.40	0.80	-
Prawn, spot	<i>Pandalus platyceros</i>	0.93	1.20	4.30	1.60	-
Pyrosome	<i>Pyrosoma atlanticum</i>	27.78	31.3	16.4	28.50	24.2
Salps	--	6.48	3.60	4.30	4.90	8.10
Sand dollar	<i>Dendraster excentricus</i>	0.93	1.20	1.40	-	-
Sea cucumber, unspecified	<i>Holothuroidea</i>	1.85	3.60	2.90	3.30	1.60
Shrimp, target	<i>Sicyonia penicillata</i>	3.7	7.20	2.10	4.10	6.50
Squid egg cases	--	31.48	45.80	30.00	35.00	*
Marine Plants	<i>Phycophyta</i>	21.30				
Algae, marine			13.30	20.00	9.80	9.70
Eelgrass	<i>Zostera spp.</i>	3.70	2.40	2.90	5.70	1.60
Kelp, unspecified	<i>Laminariales</i>	60.19	73.50	35.70	62.60	56.50

Category and Common Name		Scientific name	2019	2020	2021	2022	2023
Kelp, feather boa		<i>Egregia menziesii</i>	7.41	6.00	6.40	7.30	1.60
Kelp, giant		<i>Macrocystis pyrifera</i>	11.11	4.80	22.90	4.10	6.50
Surfgrass		<i>Phyllospadix spp.</i>	35.19	57.80	34.30	22.00	4.80

3.1.3.2. Assessment of Sustainability and Measures to Reduce Unacceptable Levels of Bycatch

▼

Round-haul fishing seldom results in unintentionally caught fish, primarily because the vessels target specific single-species schools (PFMC 2010). Incidental catch in the CPS fishery is primarily other CPS (e.g., Pacific mackerel, Pacific sardine, or northern anchovy). If larger fish are in the net, they can be released alive before pumping or brailing by lowering a section of the cork-line or by using a dip net. Grates can be used to sort larger non-CPS from the catch (PFMC 2023b). The load is pumped out of the hold at the dock, where the catch is weighed and incidentally caught fish can be observed and sorted. Because pumping at-sea is so common, any incidental catch of small fish would not be sorted at-sea (PFMC 2023b). Most bycatch is caught when round haul nets fish in shallow water over rocky bottom (PFMC 2010). Operators try to avoid this to protect gear. Also, they may be specifically prohibited to fish these areas because of closures.

3.1.4. Habitat

3.1.4.1. Description Of Threats

▼

During the implementation of the MSFMP, there was concern over the use of chains as a seine weight in the commercial fishery. Chains had the potential of digging deeper into the ocean floor than the suggested alternatives, such as small diameter cables. The squid fleet has moved away from the use of chains and now uses weighted lines. Net bottoms and weighted lines may also scrape the ocean floor and do harm to squid egg beds. Purse seines used for squid typically do not hang as deep as purse seines used for other species, so contact with the bottom is potentially reduced.

The extent to which market squid egg beds or soft bottom habitat are disturbed by non-directed commercial fishing gears is not known at this time. Market squid are not commonly caught as incidental species to other fisheries; the highest prevalence of incidental market squid is from trawl fisheries, at routinely less than 2 tons of market squid per year from landings made between 2010 and 2023 (CDFW MLDS).

3.1.4.2. Measures to Minimize Any Adverse Effects on Habitat Caused by Fishing

▼

The MLMA requires the minimization of adverse effects on habitat from fishing activities. Beyond California’s MPA network, which affords spawning and habitat protection, seabird closure and special closure areas reduce the potential for interactions between the squid fishery and seabirds that are sensitive to disturbance from lights and noise. The weekend closure provides statewide habitat protection from squid fishing throughout the year.

3.2. Requirements for Person or Vessel Permits and Reasonable Fees

Any vessel engaged in taking squid, landing squid, or attracting squid by light for commercial purposes must have a valid market squid permit. Vessels taking squid for live bait purposes only are exempt from the permit requirements (§149, Title 14, CCR). Market squid transferrable vessel permits are transferable to vessels of comparable capacity (within 10%). These permits can also transfer to a vessel of larger capacity under a “two for one” permit retirement. Brail permits are transferable based on comparable capacity (within 10%). Transferable light boat permits are transferable and permit holders can upgrade to a transferable brail permit on a “one for one” permit retirement (Table 3-4; Table 3-5).

Table 3-5. Annual permits fees and transfer fees as of April 2024 (Reproduced from California Commercial Fishing Regulations Digest, CDFW 2024a).

Permit Type:	Fee:
Market Squid Vessel (Transferable)	\$3,636.00
Market Squid Vessel (Non-Transferable)	\$1,822.25
Market Squid Brail (Transferable)	\$3,636.00
Market Squid Light Boat (Transferable)	\$1,096.00
Market Squid Light Boat (Non-Transferable)	\$72.36
Market Squid Transfer Fee	\$500.00
Market Squid Brail (Upgrade from light boat)	\$1,500.00

Table 3-6. Initial annual permit fees and transfer fees established by the MSFMP in March 2005 (CDFG 2005).

Permit Type:	Fee:
Market Squid Vessel (Transferable)	\$2,000.00
Market Squid Vessel (Non-Transferable)	\$1,000.00
Market Squid Brail (Transferable)	\$2,000.00

Permit Type:	Fee:
Market Squid Brail (Non-Transferable)	\$1,000.00
Market Squid Light Boat (Transferable)	\$600.00
Market Squid Transfer Fee	\$500.00
Market Squid Brail (Upgrade from light boat)	\$1,500.00

← The Fishery

Monitoring & Essential Fishery Information →

 Related Links

California Market Squid Fishery Management Plan

California Department of Fish and Wildlife Pelagic Fisheries and Ecosystem Program

Marine Fisheries Data Explorer

California Department of Fish and Wildlife License Statistics

California Wetfish Producers Association

California Cooperative Oceanic Fisheries Investigations

California Current Integrated Ecosystem Assessment

National Oceanic and Atmospheric Administration List of Fisheries

Last Updated: The Market Squid Enhanced Status Report was updated in 2024.

Contact Us: To contact CDFW regarding Market Squid, please [email CDFW's Marine Region](#) or call 831-649-2870.

Citation: California Department of Fish and Wildlife. 2024 Market Squid, *Doryteuthis (Loligo) opalescens*, Enhanced Status Report.

Contributor(s): Katie Grady, Sarah Valencia, Dianna Porzio

Acknowledgement(s):

Market Squid Enhanced Status Report 2024

Table of Contents

▶

List of Acronyms

▶

4. Monitoring and Essential Fishery Information

4.1. Description of Relevant Essential Fishery Information

Fishery-dependent Essential Fishery Information (EFI) collected through the Department’s Market Squid Monitoring and Sampling Program include:

- Landings and effort – tonnage per day and week, number of vessels, and fishing location/block. The Department monitors tonnage to ensure closure of the fishery before the catch limit of 107,048 mt (118,000 ton) is exceeded.
- Biological – individual weight, length, sex, maturity, dried mantle weight, and gonad weight. Gonad weights are used to provide information for the egg escapement model that is intended for use as F_{MSY} proxy.

4.2. Past and Ongoing Monitoring of the Fishery

4.2.1. Fishery-dependent Data Collection

Landing receipts were the earliest form of fishery-dependent data collected from the commercial market squid fishery. The Department began collecting receipts in 1927 for all commercial fisheries to provide general knowledge of fishing activity, specifically in terms of amount landed, landing location, gears used, and value of the catch (CDFG, 2005). The Department actively monitors the commercial market squid fishery by collecting dockside port samples and logbook information. The monitoring program began in October 1998, and logbook information became mandatory in 2000. The Commission maintained existing fishery-dependent market squid monitoring programs as one of the MSFMP fishery control rules in 2004. The primary goal of collecting these data is to monitor changes in the biological characteristics and to characterize California’s commercial market squid fishery for development of population models (CDFG, 2005).

Sample collection is centered on the major port complexes of landing, which include Monterey (Monterey and Moss Landing), Santa Barbara (Santa Barbara, Ventura, and Port Hueneme), and Los Angeles (San Pedro and Terminal Island). Other ports such as Eureka, Bodega Bay, Half Moon Bay, and San Francisco are included when landings are significant in those areas. Standardized protocols are used to maintain consistent sampling among port complexes. During the offloading process samplers make visual observations of species composition and incidental catch (Figure 4-1). They also record % composition of CPS (Pacific sardine, Pacific

mackerel, jack mackerel, northern anchovy) by volume of the total landing. All other incidental species observed in the landing are noted, with special attention paid to prohibited or protected species (e.g., salmon). The observations are reported in PFMC CPS Stock Assessment and Fishery Evaluation (SAFE) reports.

Vessel captains are interviewed during the offload in order to collect fishing effort information. Data collected by the interviews are:

- date of landing
- Department block location where fishing occurred
- how much was captured
- number of sets made
- gear used
- if a light boat was used
- location and market of landing
- landing receipt number
- anecdotal information given to help characterize the fishery

A squid sample consists of 30 individuals randomly collected throughout the offload (Figure 4-2). The samples are processed for:

- weight
- length
- sex
- presence of spermatophores or eggs
- gonad weights from the first five females to determine fecundity
- mantle punch samples from the first five females and first male used to determine condition and maturity
- statoliths (calcareous structure) from first five females and the first male used to determine age

Data pertaining to interactions with egg beds are also collected during the interview and sample collection process. This specific project was initiated during the 2007-2008 market squid fishing season. Data collected during the interview are:

- net type used
- net depth in fathometers
- mesh size (in)
- leadline type
- average fishing depth
- if the net touched the bottom

Samplers record egg case presence and if egg cases appeared to come from the bottom. Whenever possible, samplers collect market squid egg cases during the sample collection process. Samplers then determine and record maturity and embryo development stage.

When eggs are offloaded at the processor, there are two possibilities for egg presence: (1) the egg cases were laid in the net after the squid were seined and prior to returning to port, or (2) the egg cases, laid previously, were removed from the seafloor. If eggs were recently laid and are in the first few days of development, it is not possible to determine if they came from the seafloor or were laid in the net. If eggs are further developed and organogenesis is apparent (Figure 4-3) this indicates eggs were deposited on the seafloor as opposed to net-laid.

The earliest stage of development includes cleavage and gastrulation (Figure 4-3a) (Fields 1965). The second stage of development includes organogenesis (Figure 4-3b,c). On or around 8 days after fertilization organ formation begins and progresses quickly. Shortly after, the mantle ridge thickens, the eyes grow more prominent, and the first-forming ventral arms appear. The third stage of development (Figure 4-3d) includes growth of specific organ systems and apparent embryo development.

Market Squid Logbook Program

Market Squid Vessel and Light/Brail Boat Logbooks (logs) are a mandated system for fishermen to record their fishing activities. These data supplement data gathered from landing receipts. Logbook data are used to monitor fishing locations, environmental conditions, fishing effort, catch amounts, use of catch, and fleet characterization and capacity.

Data collected from Market Squid Vessel and Light/Brail Boat Logbooks are included in Figures 4-4, 4-5, and 4-6.

Additional Sampling Efforts

The Department has assisted with additional market squid sample collections to supplement various independent and collaborative research projects over time. These studies were generally intended to increase understanding of market squid life history (Table 4-1).



Figure 4-1. Photos of the market squid offloading process (Photo Credit: CDFW).

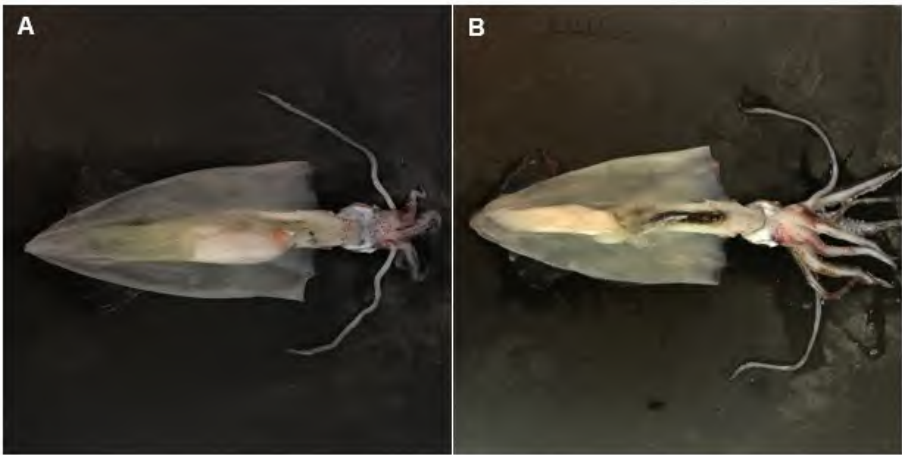


Figure 4-2. Photos of (A) a dissected female market squid and (B) a dissected male market squid. (Photo Credit: Kristen Ondrejko, CDFW).

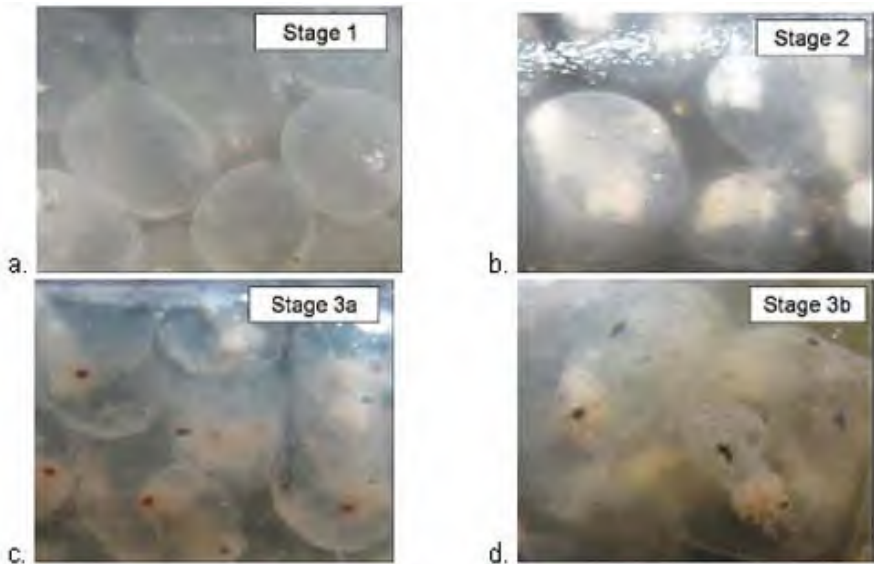


Figure 4-3. Photographs of market squid embryos at various stages of development: a. Beginning stage; cleavage and gastrulation b. Intermediate stage, organogenesis c. Intermediate stage; development of specific organ systems, red eyes present, and large yolk sac, and d. End of embryo development stage; close to hatching, black eyes, chromatophores and ink sac present, and yolk sac is highly reduced (Photo Credit: Mike Navarro, CDFW).

Figure 4-4. Market Squid Vessel Logbook template (\$149, Title 14, CCR). DFW 149a. Revised March 1, 2015.

Figure 4-5. Market Squid Light/Brail Boat Logbook template. (§149, Title 14, CCR). DFW 149b. Revised March 1, 2015.

Figure 4-6. Market Squid Vessel Logbook profile form template (§149, Title 14, CCR). DFW 149a. Revised March 1, 2015.

Time Period	Principal Investigator	Resulting Publications	Samples Collected	General Purpose
-------------	------------------------	------------------------	-------------------	-----------------

Time Period	Principal Investigator	Resulting Publications	Samples Collected	General Purpose
1999 - 2001	John Butler	Butler et al. 2001	Gonad weight, mantle weight, statoliths	To develop the ageing methodology for market squid, to look at fecundity in terms of batch fecundity and age at maturity, and to develop a population model for market squid.
1999 - 2002	William Gilly	Gilly 2003	Gill filaments	To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery, as well as between nearshore and offshore populations in Monterey.
2008 - 2009	Robert Warner	Warner et al. 2009	Egg cases	To identify geographic differences in trace element concentrations in adult natal core and early larval areas of statoliths, ultimately for use in identifying source populations of stocks.
2008 - 2009	Mark Lowry	Not Published	Mantle length	Regression analysis on mantle length to beak size.

Time Period	Principal Investigator	Resulting Publications	Samples Collected	General Purpose
2014 - 2015	Samantha Cheng	Cheng et al. 2020	Egg cases	To determine if there are separate market squid stocks in California specifically between the northern fishery and the southern fishery.

4.2.2. Fishery-independent Data Collection

Fishery-independent data on juvenile market squid come from annual Rockfish Recruitment and Ecosystem Assessment reports (e.g., juvenile rockfish surveys). The CPUE of regional forage (northern anchovy, Pacific sardine, krill, market squid, juvenile rockfish, juvenile sanddabs, and juvenile Pacific hake (*Merluccius productus*)) in the central CCE (defined as the nearshore region of the eastern Pacific between Crescent City Harbor and Point Conception) is measured annually using NOAA trawl surveys in spring or summer. These data are publicly available at the NOAA CCIEA website (CCIEA 2023).

In addition, there is a long-standing data series of market squid paralarvae abundance from surveys conducted through collaborative efforts by multiple agencies and the fishing industry. These data, in part, come from CalCOFI, a multi-agency partnership between the Department, NOAA, and Scripps Institution of Oceanography formed in 1949 to study the ecological aspects of the Pacific sardine population. Recent focus has shifted to include the overall study of the marine environment off California, the management of its living resources, and monitoring the indicators of climate change. Quarterly surveys are conducted off southern and central California, collecting hydrographic and biological data on static stations over transect lines. Biological data collection methods include Continuous Underway Fish Egg Sampler, trawling, bongo net tows for displacement volumes of zooplankton and pelagic invertebrate, and fisheries acoustics. A bongo net consists of paired plankton net bags 2.5 m long attached to stainless steel rings 60 cm in diameter. CalCOFI data are accessible to the public through their data server (CalCOFI 2020).

Paralarvae abundance surveys makeup the largest fisheries-independent data series for the market squid fishery. Sampling was opportunistic prior to 2010, but since then CWPA has maintained standardized surveys. CWPA conducts the paralarval surveys at least four times each year in the SCB (following the CalCOFI schedule when possible) and twice a year in the greater Monterey Bay and Half Moon Bay area; during which they also collect water samples at select sampling stations (Figure 4-7).

Original studies investigated the correlation between paralarvae abundance and CPUE of the fishery (Zeidberg et al. 2006; Koslow and Allen 2011). Zeidberg et al. (2006) used samples collected inshore from independent research cruises from 2000 to 2003. This paralarvae density index correlated with CPUE showing a significant stock recruitment relationship, although collections only spanned 4 yr. Koslow and Allen (2011) used manta tow samples taken from quarterly CalCOFI surveys from 1981 to 2008, which are located offshore from the Zeidberg et al. (2006) study. These manta tows were conducted 8 cm below the air-sea interface using a neuston net which has a large, rectangular net frame. Results from the Koslow and Allen (2011) study were less significant; however, the data spanned 20 yr and were only correlated at an annual scale.

The CWPA initially implemented bongo tows in 2005. The original intent of this work was to supplement the CalCOFI survey by providing samples nearshore, adjacent to known spawning sites, since CalCOFI sample sites rarely overlap squid paralarvae habitat. The CWPA trained operators to tow bongo nets, but comprehensive sampling was not always logistically possible. Beginning in January 2011, CWPA chartered dedicated fishing vessels for the specific purpose of conducting these small net tows on a systematic schedule. There is a difference, however, in the collection methods between these studies. Koslow and Allen (2011) analyzed

CalCOFI manta tow data because squid presence was greater in the surface-oriented manta nets than in the offshore obliquely deployed bongo tows. However, bongo tows are considered more appropriate since they tend to sample 2-week-old squid, which have survived the critical stage of first feeding. Manta tows may sample day old squid. Additionally, the older paralarvae begin to migrate to deeper depths, thereby avoiding mortality from radiation and surface predation.

This paralarvae sampling project aims to better understand the physical and ecological factors that control recruitment to major spawning grounds, and to improve the assessment of market squid stocks off California. The CWPA has also worked with the SWFSC to determine, through stoichiometry, if the chemistry in the water matches or differs from the chemistry of the paralarval and adult statoliths. The Department has collected market squid samples from commercial fishery landings that coincide with these surveys and similar research. Using paralarvae and adult samples, Warner et al. (2009) found geographic differences in trace element concentrations in the statoliths of paralarval market squid. The chemical signatures of adult statoliths closely matched those of paralarvae suggesting that matching fingerprints of ripe eggs and adults 6 months (mo) after could indicate the degree of mixing of market squid populations on ecological timescales.

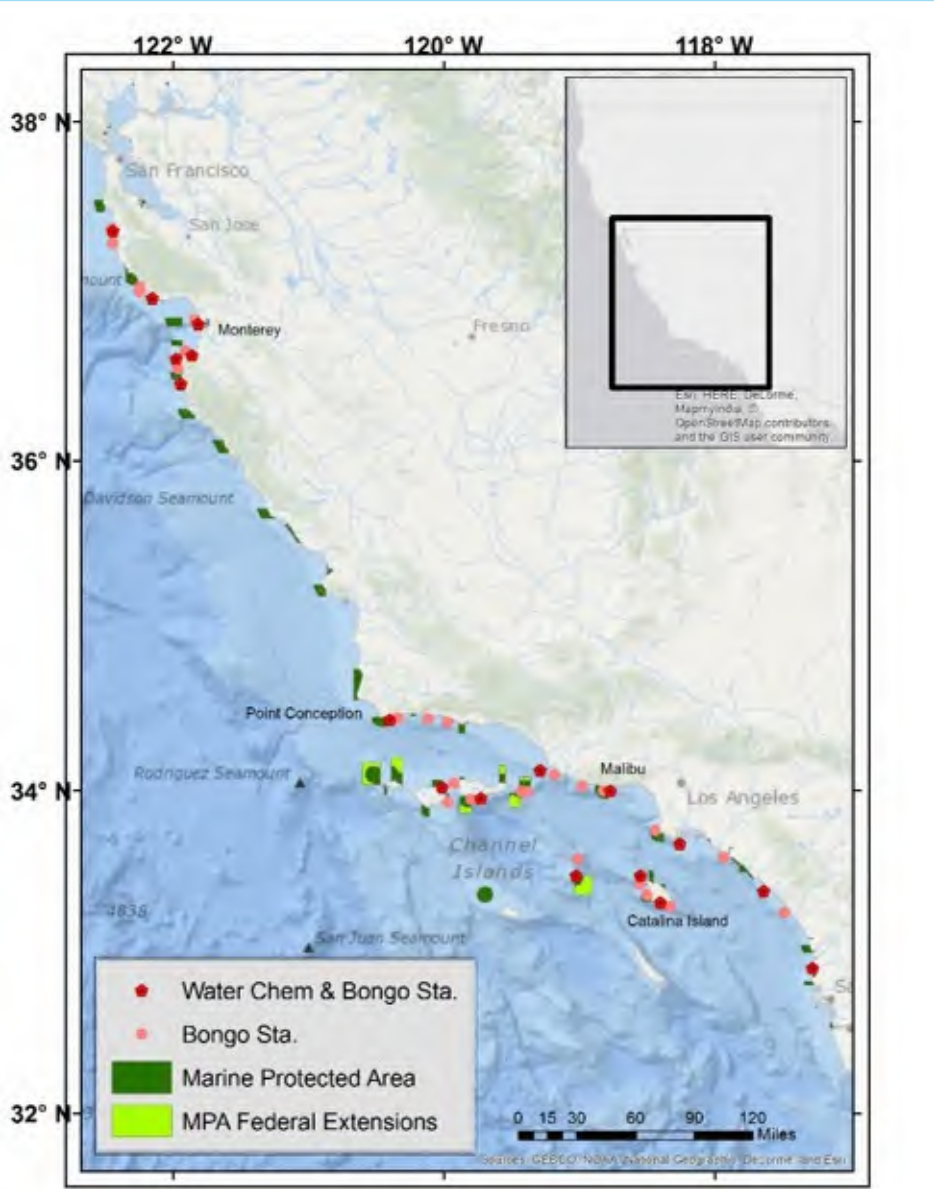


Figure 4-7. Paralarvae sampling areas off California are shown as pink circles. Five regions are identified across the sampling effort and include Monterey, the north Bight and south Bight of the SCB, and north and south Channel Islands (Reproduced from Van Noord and Dorval 2017).

← Management

Future Management Needs & Directions →

 Related Links

[California Market Squid Fishery Management Plan](#)
[California Department of Fish and Wildlife Pelagic Fisheries and Ecosystem Program](#)
[Marine Fisheries Data Explorer](#)
[California Department of Fish and Wildlife License Statistics](#)
[California Wetfish Producers Association](#)



 [Portal Home](#)

 [Overview](#)

 [Resources](#)

[5.3. Opportunities for Future Management Changes](#) [5.4. Climate Readiness](#)

[Collapse All](#)

5. Future Management Needs and Directions

5.1. Identification of Information Gaps

The primary information gaps for the market squid fishery include the following: determine if changes in fishing behavior have altered traditional assumptions for egg escapement; explore spatial and temporal patterns in egg escapement; evaluate the effects of net contact with egg beds; improve understanding of spawning ground distribution and natural mortality; incorporate oceanographic data in multivariate approaches to investigating current fisheries-dependent data streams; and quantify age composition of the catch (Table 5-1).

Table 5-1. Informational needs for California market squid using available data streams and their priority for management.

Type of information	Priority for management	How essential fishery information would support future management
Number of juvenile squid caught by the fishery over time	High	Used to confirm assumption that catch is still mainly composed of adult squid as it pertains to the egg escapement method.
Differences in gonad weight based on timing of catch	High	Assess differences in spawning success in response to daytime fishing versus nighttime fishing.
Net contact with egg beds	Medium	Important for assessing disturbance to spawning beds.
Changes in fishing location and/or effort over time	Medium	Could indicate if regional management and/or managing by sectors would be appropriate.

Type of information	Priority for management	How essential fishery information would support future management
Fishing mortality in terms of egg escapement by gear type	Medium	Could indicate if certain gear types should be regulated differently.
Changes in type and quantity of incidental catch	Medium	Could indicate how changes in gear type, effort, location, or timing of fishing might correspond with catch composition.
Changes in net size	Low	Information would inform any necessary gear restrictions to ensure spawning success.
Changes in GT or average load size over time	Low	If the amount of squid caught in a single trip/set has changed over time, this could impact capacity goals and assumptions about effort or access.
Size composition of cohorts	Low	Used to determine if the size structure of the stock has changed over time and what variables might be driving that change.
Improved proxy for CPUE	Low	Finding a more suitable equivalent for CPUE could supplement fishing mortality and biomass estimates.

5.2. Research and Monitoring

5.2.1. Potential Strategies to Fill Information Gaps

As standardized fisheries-dependent data collection continues to shift to a digital platform, information gaps will be easier to fill. The Department is actively transitioning from paper submission to electronic submission, such as the recently implemented Marine Landings Database System (MLDS), which is populated by landing tickets entered through an electronic interface (E-tix). Should the market squid logbook program convert to electronic log submission (E-logs) this would substantially improve the timeliness of data collection and efforts to conduct QA/QC for incoming data, ultimately providing Staff more time to transform fishery-dependent data in to applied information.

Age data are needed to determine the degree to which changing environmental conditions may lead to changes in age at reproductive maturity. This question is best answered using egg escapement. Additionally, it is possible that long-term changes in the age or size structure of the stock are likely driven by environmental conditions either in addition to/or independent of fishing pressure (Jackson and Domeier

2003; Protasio et al. 2014). The Department currently lacks the staffing and resources to age squid statoliths. Visual ageing is time consuming, includes a lengthy training process, and introduces a high degree of variation/bias. Additionally, many staff are currently tasked with ageing otoliths for federally managed CPS finfish, which do have a year-class structure unlike squid. The Department is considering investments, such as the Fourier Transform Near-Infrared Spectroscopy Analyzer, a technology that is being developed for use in ageing otoliths and statoliths. This spectroscopic method uses the near-infrared region of the electromagnetic spectrum to elucidate overtones and bond vibrations in the molecules of a particular sample. By quantifying the spectral characteristics of otoliths or statoliths with reference-validated age estimates, this calibration allows for automatic ageing of remaining samples. This could substantially improve productivity and accuracy.

The Department could also greatly benefit from more long-term fisheries-independent data collection in the areas listed in Table 5-2. Direct strategies to fill information gaps may include using tools for nearshore and subtidal surveying such as juvenile trawl surveys, egg bed surveys using ROV technology or divers, and adult abundance surveys using aerial or drone technology. Because squid egg beds are often found deeper than 80.0 ft (24.4 m), a depth that becomes more difficult to survey with divers, ROV technology could facilitate more regular egg bed monitoring. ROV video and mechanical collection components could be used to help determine location and spatial extent of egg beds, egg densities, and changes in spawning potential. With improved side-scan sonar and drones equipped with spectral imaging technology, the Department and collaborators could conduct population surveys of adult spawning aggregations, particularly in unfished spawning grounds. Information gained from these surveys would be beneficial for determining distributional shifts in response to climate change.

Table 5-2. Informational needs for California market squid not attainable from existing data streams and their priority for management.

Type of information	Priority for management	How essential fishery information would support future management
Increase sample size of pre-ovulatory females	High	These samples could improve estimates of standing stock of oocytes for the egg escapement model.
Location and spatial extent of spawning grounds, specifically in unfished areas	High	Important for directing fishery independent survey efforts and determining the distribution/quality of essential fish habitat (Navarro et al. 2018).
Improved estimates of natural mortality	High	Could improve indices for the egg escapement model and determination of more accurate MSY/OY proxies
Age composition of cohorts	High	Need to age statolith collection to understand the role that age plays in maturity and if the age structure of the stock has changed over time

Type of information	Priority for management	How essential fishery information would support future management
Statolith elemental signatures of egg, larval, and adult samples	Medium	Could identify source populations for stocks and determine the relative value of spawning sites to recruitment
Effects of oceanographic conditions on spatial distribution and range expansion	Medium	Provides insight to where fishing effort is likely to be focused in the future and on potential new fishing grounds and communities
Effects of attracting lights on natural spawning behavior	Medium	Improved understanding of these impacts could provide for the necessity of alternative or more appropriate lighting regulations
Egg densities and dynamics	Low	Understanding how egg densities vary based on bed size can help to characterize the value of key spawning grounds
Direct biomass estimates	Low	Could set a more dynamic SCL using more robust reference points (Ralston et al. 2018)
At-sea bycatch observations	Low	Used to confirm that changes in fishing behavior have not increased the likelihood of at-sea bycatch

5.2.2. Opportunities for Collaborative Fisheries Research

The Department has collaborated in the past and will continue to work with outside entities such as academic organizations, non-governmental organizations, citizen scientists, and both commercial and recreational fishery participants to help fill information gaps related to the management of state fisheries. The Department will also reach out to outside persons and agencies when appropriate while conducting or seeking new fisheries research required for the management of each fishery.

The ROV and drone surveys described above could be conducted collaboratively with academia and scientists with existing technical capacity and equipment. Additionally, there are many unanswered questions surrounding market squid biology, distribution, and abundance, particularly in projecting how populations respond to environmental and abiotic changes independent of fishing pressure. Efforts could be aimed at expanding the inflow of fishery-independent data. Making ecosystem level connections between how shifting oceanographic conditions govern changes in market squid physiology, behavior, and spawning success may help to inform management.

Citizen science could be a useful avenue for compiling information on market squid egg bed distribution. If recreational, working, or scientific scuba divers had an avenue, such as a social media platform, to post photos of and spatial information on squid egg beds, this photo log could provide clues to shifts in ideal spawning habitat, independent of fishing efforts. This public interface could include photos submission or details on the date and Global Positioning System location of the sighting. Existing subtidal monitoring programs and citizen science groups could incorporate egg bed sightings into surveys or provide incidental observations.

5.3. Opportunities for Future Management Changes

This section is intended to provide information on changes to the management of the fishery that may be appropriate but does not represent a formal commitment by the Department to address those recommendations. ESRs are one of several tools designed to assist the Department in prioritizing efforts and the need for management changes in each fishery will be assessed in light of the current management system, risk posed to the stock and ecosystem, needs of other fisheries, existing and emerging priorities, as well as the availability of capacity and resources.

The California market squid population is inherently resilient to fishing and largely dependent on seasonal recruitments. The fishing fleet targets market squid when available and turns to alternative fisheries when squid are not aggregating. This decision is based on market demand, squid availability, and population fluctuations. The nature of this dynamic is somewhat unique in fisheries management and stems from the life-cycle characteristics common to market squid such as short lifespan, rapid growth, and little overlap of generations resulting in large natural fluctuations in abundance.

While market squid is currently considered a sustainable fishery with an adequate regulatory framework, there may be opportunities to improve fishery control rules, particularly in terms of clarifying language and rectifying potential loopholes. Other, more substantive changes to regulations could include altering gear, temporal, spatial, or effort restrictions and implementation of electronic monitoring.

Review of the Egg Escapement Method

The egg escapement Method is considered an “informal” management tool and the model is not currently intended for use in real-time management (PFMC 2011). The MSFMP sets a threshold value of 30% or greater egg escapement (e.g., an FMSY proxy resulting in egg escapement $\geq 30\%$). This spawning stock biomass per recruit ratio of 30% was based on fishery data from a vertebrate species, Georges Bank haddock (*Melanogrammus aeglefinus*), whose life history may vary from those of a pelagic invertebrate such as market squid (Gabriel et al. 1989). Furthermore, fishery control rules allow for additional escapement not represented in the model, such as excess spawning afforded by weekend closures and spawning grounds provided by the state’s MPA network.

As an assessment tool, the model has potentially unexplored utility in evaluating population dynamics and biological reference points related to MSY (PFMC 2011). The egg escapement Method is based on several assumptions: (1) immature squid are not harvested; (2) potential fecundity and standing stock of eggs are accurately measured; (3) life history parameters are accurately estimated (e.g., natural mortality and egg laying rate); and (4) instantaneous fishing mortality is translated into meaningful management units (PFMC 2011).

While annual statewide egg escapement goals are routinely met with current fishery control rules, there are instances where relative escapement falls below 30% on quarterly and regional scales. Historically, the fishery saw high catch within and among regions following some of these instances suggesting that recruitment is highly sporadic, and that one region of the state may provide recruits to a different region. Because fishing effort often peaks six months apart between central California and southern California, it is possible that recruits from successful central California spawning activity may become the adults taken in the southern California area, and vice versa (Butler et al. 1999). Improving understanding of these spawning patterns at finer scales will help to guide management response under a changing climate. A rise in concentrated fishing pressure coupled with contraction of suitable spawning habitat during El Niño events could affect localized

spawning potential, abundance, and recruitment (Cheng et al. 2020). The Department and NOAA affiliates are actively exploring the utility of the egg escapement model and spatial and temporal patterns of escapement that may better inform management. Extending temporal closures or dispersing effort on a region-specific basis are potential options to ensure adequate spawning.

Lighting

Lighting regulations are in effect to minimize light emissions, and ensure lights are not directed onto nearshore cliff areas with human populations or where birds are nesting. The light shield regulations may need to be evaluated in relation to modern equipment. For example, §149, Title 14, CCR states that lights cannot total more than 30,000 watts; however, light emitting diode bulb output is measured in lumens.

Additional lighting regulations may also be directed at restricting use of submerged lights. There is currently no prohibition on lowering lights into the water column. Because squid may spawn at depths where surface lights have no effect it could be prudent to prevent lighting at depth. Prohibiting the use of submerged lights not permanently attached to the hull of the vessel or lowering the lights to a specified distance below the water surface are potential solutions.

Egg Beds

Dockside sampling and logbook records can be used to attempt to gauge the frequency of: (1) impacts to substrate where eggs may be deposited; (2) damage or mortality to egg masses from contact with gear itself (PFMC 2011). When market squid egg cases are observed at offloading sites, there are two potential reasons that egg cases may be in the net: (1) squid released eggs in the net after being captured, or (2) egg cases were taken from the ocean floor during fishing activity. From July 2010 to July 2020, market squid egg cases were identified in 26.2% of observed landings (CDFW, unpublished data). Because market squid can exude egg cases while in a seine net, the observed egg cases were collected and aged. If eggs are more than one day old, then egg cases were likely removed from the bottom (Figure 4-3). It was found that 43.5 % of sampled eggs were not spawned in the net, suggesting that at least 10.1% of total sampled landings included interaction with egg beds. There are no records of egg cases observed in landings made using brail gear.

Options to mitigate interactions with egg beds were discussed during the 2023-2024 SFAC process, which resulted in a recommendation for vessels to use riblines. Additionally, further research could include looking at potential patterns of net contact with egg beds and how that information could be applied to management. Research using divers or ROV's could be conducted to monitor sites immediately following fishing activity.

Effort

There are currently no bounds as to how much squid can be returned in a single trip, which could impact the rate at which the SCL is met. Evaluating changes in GT, CPUE, set size, or load size over time could help determine if changes to capacity management are merited. If needed, limiting either GT, the size of the landing returned to port, or the number of trips in a given time period are potential methods to slow down the rate of catch. This would allow for a longer fishing season in "booming" years when the SCL is met and reduce competition on the water. Alternatively, there could be benefits to ensuring certain school sizes are targeted to correspond with trends in spawning behavior.

Access

The intent of restricting access to the market squid fishery was to produce a moderately productive and specialized fleet, and to limit the extent of fishing pressure on the resource. The evolution of permit transfers, the sustained international demand for squid, and the substantial increase in the cost of a market squid permit over the past two decades has made access to the fishery increasingly difficult, and this has subsequently altered the socioeconomic landscape. Considering the current scale of operations, these factors could impede the existence of small-scale, artisanal fishing opportunities, which may provide additional economic and employment opportunities to existing coastal fishing communities in the state of California. While prioritizing the need to fill the information gaps provided in Table 5-1 and 5-2, these socioeconomic factors also need to be considered.

Experimental Permits

Section 149.3, Title 14, CCR, allowed the Commission to issue up to three Non-Transferrable Market Squid Vessel Permits for the purpose of developing a squid fishery in areas previously not utilized for squid production. Three experimental market squid vessel permits were discussed at the Commission in 2014 and 2015 but were not issued on the grounds that the window for issuing these types of permits had passed. A similar request was reviewed in 2018 and that discussion was postponed in part due to the preparation of this ESR and in part to the fact that vessels have shown the ability to move when squid are available. In 2022, the Fish and Game Commission adopted a broad Experimental Fishing Permit program, which resulted in the repeal of the market squid Experimental Fishing Permit (Title 14, Section 149.3). From 2023-2024, the Department’s Squid Fishery Advisory Committee (SFAC) discussed the potential for new small-scale fishery access. The SFAC recommended that the new EFP program is an option for those interested in exploring potential fishing opportunities for market squid that would not compete with the already established restricted access fishery spatially or economically. The Department will recommend that EFPs be issued in limited circumstances to help test the possibility of new squid fishing opportunities.

Market Squid Logbook Evaluation

The data required in logbooks should be reviewed to ensure information submitted is useful for management and for monitoring long-term trends. In particular, estimated tonnage remaining after fishing is completed, SST, and evidence of market-order limits have either proven difficult for operators to determine or are consistently unreliable. Additionally, self-reported location and bycatch information are less accurate compared to alternatives like Vessel Monitoring Systems and at-sea observer programs. Any new logbook program should consider a transition to an electronic format and digital vessel tracking. Many operators and vessel owners reside out of state making paper communication increasingly difficult. Timeliness of data submission and compliance could be substantially improved under an electronic system. Specifically, for compliance, the ability to cross-reference log and landing records becomes much easier if both monitoring tools include timely submission in a digital format. Furthermore, there is currently no field for LE Permit Number when submitting a landing record through E-tix. Without that number and with intermittent LE permit transfers, cross-referencing becomes more difficult. The transition to an E-log program would require a full rulemaking and continued collaboration with industry representatives.

5.4. Climate Readiness



Market squid are highly responsive to changes in environmental conditions, with populations experiencing dramatic variability in abundance over time and space. This can present challenges to managers even under normal climate variability and is likely to be exacerbated by climate change. Landings of market squid in California have been significantly lower during El Niño events (Zeidberg et al. 2006), because warmer periods may reduce reproductive output of females (Henry et al. 2003), the amount of available spawning habitat (Zeidberg et al. 2011b), larval abundance (Koslow and Allen 2011), and growth rates (Jackson and Domeier 2003; Reiss et al. 2004). Historically, while catches have been extremely low during these periods, the market squid fishery has rebounded quickly when conditions improve. However, given the short life span of squid, extended warm water periods could impact the availability of the species to the fishery. Given the ecosystem role that market squid play in the CCE, abundance may also be suppressed by predation. These various factors may result in an extended period of low catches in this fishery.

Climate change may also result in shifts or expansion in suitable habitats for market squid. Research has shown that market squid recruitment may be influenced by the availability of sandy bottom habitat between 10 and 12 °C (50 and 53.6 °F) (Zeidberg et al. 2011b), and there may be a shift or expansion in these habitats to either deeper or more northerly areas (Burford et al. 2020; Chasco et al. 2022; Suca et al. 2022). Embryo habitats may be more limited by pH or oxygen availability than temperature (Navarro et al. 2018), and these factors are also expected to change in the future. Conversely, decreases in the oxygen content of deep ocean waters off the coast of California could compress the depth range for adult market squid (Bograd et al. 2008; Stewart et al. 2014). As a result of these changes there may be shifts in the locations where fishing and landings occur. Given the emerging research on the influence of environmental factors on CPS and the propensity for squids to modify their own physiology through RNA editing in response to their environment,

there may be a need to explore the incorporation of environmental variables into stock assessments, predictive models, or harvest control rules (Voss and Rosenthal, 2023).

← Monitoring & Essential Fishery Information

 Related Links

California Market Squid Fishery Management Plan

California Department of Fish and Wildlife Pelagic Fisheries and Ecosystem Program

Marine Fisheries Data Explorer

California Department of Fish and Wildlife License Statistics

California Wetfish Producers Association

California Cooperative Oceanic Fisheries Investigations

California Current Integrated Ecosystem Assessment

National Oceanic and Atmospheric Administration List of Fisheries

Last Updated: The Market Squid Enhanced Status Report was updated in 2024.

Contact Us: To contact CDFW regarding Market Squid, please [email CDFW's Marine Region](#) or call 831-649-2870.

Citation: California Department of Fish and Wildlife. 2024 Market Squid, *Doryteuthis (Loligo) opalescens*, Enhanced Status Report.

Contributor(s): Katie Grady, Sarah Valencia, Dianna Porzio

Acknowledgement(s):

Market Squid Enhanced Status Report 2024

Table of Contents	▶
List of Acronyms	▶
List of Figures	▶
List of Tables	▶
Literature Cited	▶

State of California
Department of Fish and Wildlife

Memorandum

Date: April 8, 2025

Received 4/10/2025
Original signed copy on file

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Submission of Initial Statement of Reasons for the April 16-17, 2025 Fish and Game Commission Meeting to Amend Sections 53.01, 149, and 149.1, and Repeal Sections 53.02 and 53.03, Title 14, California Code of Regulations, re: Commercial Taking of Market Squid**

Please find attached the Initial Statement of Reasons to amend sections 53.01, 149, and 149.1, and repeal sections 53.02 and 53.03, Title 14, California Code of Regulations. The proposed amendments were developed through a multiyear constituent advisory group process and include scientific and enforcement input. Changes to market squid regulations reflect Department recommendations discussed and agreed upon during the multiyear Squid Fishery Advisory Committee process. The proposed amendments add definitions, require the use of a purse seine rib line placed above the purse seine leadline, update the name of the Greater Farallones National Marine Sanctuary, extend the current weekend market squid fishery closure, and establish a new method of informing market squid fishermen about closures. Additionally, the proposed amendments clarify the requirements of the use of lights to aggregate squid and repeal sections 53.02 and 53.03.

The Department recommends that the new regulations become effective January 1, 2026. The proposed management measures are necessary to reduce potential bycatch and impacts to the sea floor. These changes will benefit squid reproduction and spawning success and increase the likelihood of the fishery remaining sustainable in the face of future environmental uncertainty.

If you have any questions or need additional information, please contact Dr. Craig Shuman, Marine Regional Manager at R7RegionalMgr@wildlife.ca.gov. The notice for this rulemaking should identify the Department point of contact as Trung Nguyen, Environmental Scientist.

ec: **Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman, D. Env., Region Manager
Marine Region

Melissa Miller-Henson, Executive Director
Fish and Game Commission
April 8, 2025
Page 2

John Ugoretz, Env. Program Manager
Marine Region

Eric Kord, Assistant Chief
Law Enforcement Division

Crystal D'Souza, Attorney
Office of General Counsel

Ona Alminas, Env. Program Manager
Regulations Unit
Wildlife and Fisheries Division

Fish and Game Commission

David Thesell, Deputy Executive Director

Susan Ashcraft, Marine Adviser

Sherrie Fonbuena, Analyst

State of California
Fish and Game Commission
Initial Statement of Reasons for Regulatory Action

Amend Sections 53.01, 149 and 149.1,
Repeal Sections 53.02 and 53.03,
Title 14, California Code of Regulations
Re: Commercial Taking of Market Squid

I. Date of Initial Statement of Reasons: March 10, 2025

II. Dates and Locations of Scheduled Hearings

(a) Notice Hearing:

Date: April 16-17, 2025

Location: Sacramento

(b) Discussion Hearing:

Date: June 11-12, 2025

Location: Sacramento

(c) Adoption Hearing:

Date: August 13-14, 2025

Location: Sacramento

III. Description of Regulatory Action

(a) Statement of Specific Purpose of Regulatory Change and Factual Basis for Determining that Regulation Change is Reasonably Necessary

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR), “Department” refers to the California Department of Fish and Wildlife, and “Commission” refers to the California Fish and Game Commission.

The Department recommends that the Commission adopt the following proposed changes focusing on the commercial take of market squid. The last time market squid regulations were subject to major amendment was at the adoption of the Market Squid Fishery Management Plan (FMP) in 2004. The proposed amendments here represent the results of a significant multi-year long constituent advisory group process as well as scientific and enforcement input. The proposed changes are necessary to reduce potential bycatch and increase the likelihood of the fishery remaining sustainable in the face of future environmental uncertainty.

Background

The market squid fishery is regularly the largest commercial fishery in California, in both volume and ex-vessel value. Managed under the Commission’s authority since 2001, the fishery operates within the framework of the Market Squid FMP. The FMP defines harvest control rules (i.e., rules to manage a fishery developed under provisions of the Marine Life Management Act), a restricted access program, environmental protections, and fishery administration.

While regulations have been periodically adopted to adaptively manage various aspects of the fishery, 2021 marked the initiation of the first comprehensive review of the Market Squid

FMP since its adoption in 2004. The Department developed a multi-phase management review, supported by the Commission, and anchored in a Squid Fishery Advisory Committee (SFAC). Established by the Department's Director according to Section 53.02, the SFAC played a crucial role in assisting with developing and reviewing fishery assessments, management options and proposals, and FMP amendments.

During the final SFAC meeting in May 2024, the Department presented draft recommendations and adjusted the recommendations to reflect discussion points and expression of support from SFAC members. The SFAC recommended regulation changes, as well as non-regulatory actions.

In addition, the Department recommends changes for administrative topics not discussed during SFAC meetings. The first addresses the notification method used for closing a fishing season. Additional administrative changes clarify that a purse seine skiff does not need its own market squid vessel permit, correct the name of the Greater Farallones National Marine Sanctuary to its present name, and modify the definition of light shields to reflect possible changes to the manner in which light is emitted.

The proposed regulations define rib line and will require the use of a purse seine rib line, which must be placed above the purse seine leadline. The proposed regulations will extend the current weekend market squid fishery closure from noon to 7am on Friday statewide as well as an additional extension from Sunday at noon to Sunday at 2359 hour in the Monterey Bay Area (between a line due west from Point Lobos [36° 31.461' North Latitude] and a line due west from Pigeon Point [37° 11.000' North Latitude]).

The proposed regulations clarify that using lights to attract squid is considered a form of take and that such lights generally may not be used during the weekend closures. The existing exemption for lighting on the weekend when taking market squid as live bait will be amended to make the provision clearer and more enforceable. The amendment will clarify that lighting on the weekend is only allowed when actively taking market squid for live bait. Revisions to the regulation will specify that live market squid must be kept in a condition to be sold as live bait and returned to the water if it is not sold as live bait. Also, vessels engaged in the take of market squid for live bait must notify the Department in advance, to indicate their intent to take live bait during a weekend closure.

Current Regulations

Current regulations in Section 53.01 specify definitions related to the market squid fishery. Section 53.02 describes process and timing of the market squid fishery as it relates to implementing the Market Squid FMP, including monitoring and regular updates; establishment of an advisory committee by the Department director to aid in assessing and responding to fishery concerns; and development of management actions consistent with the Administrative Procedure Act. Section 53.03 describes the set of management actions described in the original Market Squid FMP (Department, 2005).

Current regulations in Section 149 specify requirements applicable to vessels taking squid and vessels attracting squid with lights for the purpose of commercial take. The regulations specify that a permit is required; set a seasonal catch limit of 118,000 short tons statewide;

specify the process to close the fishery when the seasonal catch limit is expected to be reached; provide a statewide closure between noon on Friday and noon on Sunday of each week; provide exemptions that allow the take of squid for live bait purposes and allow squid to be taken incidentally in other fisheries; prohibit use of attracting lights in the Greater Farallones National Marine Sanctuary for the protection of seabirds; require the completion and submittal of logbooks; prohibit the use of lights to attract squid except as authorized under permits described in subsection 149.1(b); prescribe maximum wattage and shielding requirements for attracting lights; specify that squid taken in violation of the regulations must be forfeited to the Department; specify to whom citations may be issued; and specify that operators and crewmembers of a commercial market squid vessel or lightboat operating under the provisions of a commercial market squid permit are not required to possess a Tidal Invertebrate Permit.

Proposed Regulations

The proposed regulations implement the amended Market Squid FMP.

Repeal subsection 53.01(m)

Subsection 53.01(m) is proposed to be repealed to remove the definition of Market Squid FMP. The Market Squid FMP does not require a definition, as it is described in Section 53.00. Furthermore, it is not necessary to incorporate the document by reference as the Market Squid FMP is not intended to have the force of law because it is an informational document, rather than a regulation.

Current subsections (n) through (u) are proposed to be renumbered as (m) through (t) to reflect the repeal of subsection (m).

Amend current subsection 53.01(t), renumbered as subsection (s)

The proposed regulations revise the definition of purse seine, specifying that the net is closed near the bottom instead of on the bottom. This change is necessary to correctly define the net. In addition, language is added to specify that purse seines used to take market squid or onboard vessels in possession of market squid are fitted with a rib line. This change is necessary to ensure that commercial fishermen are aware the seine configuration clearly includes a rib line.

Add new subsection 53.01(t), Rib line

The regulations in proposed subsection 149(f) will require the use of a purse seine rib line, which must be placed above the purse seine leadline. This amendment adds the definition of a rib line to read, "Rib line means a separate line made of soft rope or other non-metallic line that is a minimum of 36 inches above the leadline on a purse seine net. The rib line must encompass the purse seine net within 60 feet of both ends of the net."

Department sampling data indicate that current purse seine fishing practices allow the net to scrape the seafloor in relatively shallow fishing areas and may increase benthic species bycatch or damage to squid egg beds. Requiring a rib line on purse seine nets will reduce contact with the seafloor. In addition, the proposed regulations will require

the use of a non-metallic rib line to purse the net instead of cables or chains (i.e., no metal lines), which will also reduce impacts to the sea floor. The requirement to use a rib line made of soft rope or other non-metallic line to purse the net mitigates potential impacts to seafloor habitats and enhances sustainability by protecting squid egg beds and other benthic species.

Repeal Section 53.02, Process and Timing, and repeal Section 53.03, Market Squid Fishery Management Plan (Market Squid FMP) Project.

These sections are proposed to be repealed, as they are either duplicative of existing authority, or are general policy statements rather than regulations, and therefore are not necessary. Existing statutory authority provides processes and purposes for development of an FMP, adopting regulations to implement an FMP, amending an FMP, convening stakeholders for advisory committees, and for monitoring and assessment of the fishery (e.g., Fish and Game Code sections 7070 *et seq.*). It is necessary to repeal these sections to reduce confusion of the regulated community and to conform to the clarity and non-duplication requirements of the Administrative Procedure Act

Amend subsection 149(a)

The proposed regulations add new subsection 149(a)(1), “A permit is not required for the seine skiff of a permitted vessel. For the purposes of this section, a seine skiff is a vessel that does not use lights to attract squid and its primary purpose is to assist the deployment of a net for a permitted vessel.”

This change is necessary to make it clear that a seine skiff vessel does not require a market squid permit because it is part of a purse seine vessel and its function is to help wrap the purse seine net and does not use lights to attract squid.

Amend subsection 149(b)(2), Closure Process.

The proposed regulations replace language in subsection 149(b)(2)(A) relating to public announcement of the effective date of squid closures on Very High Frequency (VHF) Channel 16 between the hours of 10:00 p.m. and 12:00 a.m. (midnight) with language specifying that the announcement will be posted on the Department’s website at wildlife.ca.gov/marine. The time of day of the announcement is repealed.

The proposed regulations replace language in subsection 149(b)(2)(B) related to the responsibility of operators to determine when the seasonal catch limit is expected to be reached and the fishery closed by monitoring VHF/channel 16 with language specifying they should monitor the Department’s website wildlife.ca.gov/marine. Additional proposed changes in this subsection regarding what constitutes official notice of the closure replace VHF/channel 16 with the Department’s website.

Current regulation (subsections 149 (b)(2)(A) and (B)) require the Department to notify the United States Coast Guard (USCG) to broadcast on VHF Channel 16 any upcoming closures to the market squid fishery. However, the USCG has indicated in a letter to the Department that it will no longer post notices via VHF 16 Broadcast Notice to Mariners because the “communication tools are reserved for important navigational safety information and deficiencies in aids to navigation.” The proposed regulation is

necessary to provide a revised communication tool that market squid operators can use to be informed about market squid fishery closure. The time of day of the announcement is no longer necessary as the website is accessible at any time of day.

Amend subsection 149(c), Time Closures. North of a westerly extension of the United States -- Republic of Mexico boundary line:

Current regulations specify that market squid may not be taken for commercial purposes between noon on Friday and noon on Sunday of each week. The proposed regulations change the start time of the closure to 0700 hours on Friday; the end time remains noon on Sunday in most of the State. The proposed changes further specify that market squid may not be taken for commercial purposes in the area between Point Lobos (36° 31.461' North Latitude) and Pigeon Point (37° 11.000' North Latitude) from 0700 hours on Friday through 2359 hours on Sunday of each week.

These changes are necessary for added conservation in squid fishery management and a buffer for sustainability at little expense, or potential improvement, to fishery yields and performance. The extension of the weekend closure will increase the uninterrupted spawning time for market squid, which will benefit squid reproduction and spawning success. Department analyses during the SFAC process showed a difference between the northern and southern fishery areas, supporting the difference in closure end time proposed for the Monterey Bay Area.

Amend subsection 149(d), Closed Areas for Seabirds.

The proposed regulations change "Gulf of Farallones National Marine Sanctuary" to "Greater Farallones National Marine Sanctuary" for consistency with the name of the national marine sanctuary changed in 2015 and currently in Code of Federal Regulations (CFR), Part 922, subpart H.

Add new subsection 149(f), Rib Line .

The proposed regulations add new subsection 149(f), "Rib line: After December 31, 2030, it is unlawful to take market squid for commercial purposes using a purse seine net that is not pursed using a rib line as defined in Section 53.01. All purse seine nets onboard any vessel taking or possessing market squid for commercial purposes must have a rib line attached and the rib line must be used to purse the net. A rib line must be made of soft rope or other non-metallic line. All rib lines must be made available for inspection upon demand by authorized Department personnel pursuant to Fish and Game Code Section 2012."

This addition for use of a soft rope or other non-metallic rib line to "purse" the seine net is necessary to mitigate potential impacts to sandy bottom habitat and enhances sustainability by protecting squid egg beds and other benthic species. The regulation will take into effect after December 31, 2030 in order to give the fishing community adequate time to retrofit fishing gear.

Amend current subsection 149(f), renumbered as subsection (g). Lights to Aggregate Squid.

The proposed regulations add subsection 149(g)(1). The first full sentence of current subsection 149(f) is moved to this subsection along with a new heading of “General Regulations”. Language specifying “of these regulations” is repealed due to redundancy.

The proposed regulations add subsection 149(g)(1)(A), “Lights used to aggregate squid are considered a form of take. Lights commonly used to aggregate squid that are turned on or in use are prima facie evidence that the vessel’s operator and crew are attempting to attract squid for commercial purposes.” The proposed language clarifies that use of lights to aggregate squid is considered a form of take consistent with Section 1.80 and informs the public how the Department considers the use of lights as it relates to the commercial take of market squid.

The proposed regulations add subsection 149(g)(1)(B), “Lights used to aggregate squid for commercial purposes shall not be turned on or in use during weekend closures as defined by subsection (c)(1) of this section.” This change is necessary to emphasize that “take” of market squid via attracting lights is prohibited during the weekend closure to allow for uninterrupted spawning time for market squid.

The proposed regulations add subsection 149(g)(2), Exceptions for Live Bait Purposes.

The proposed regulations add subsection 149(g)(2)(A), “Notwithstanding subsection (g)(1), vessels pursuing squid for live bait purposes only are not required to possess a permit described in subsection 149.1(b)”. This change restates and clarifies language in current subsection (f) that states, “This regulation does not apply to...vessels pursuing squid for live bait purposes only.” Language in current subsection (f) regarding seine skiffs is repealed as proposed subsection 149(a)(1) states that seine skiffs do not require a permit issued pursuant to Section 149.1 and do not use lights to attract squid.

The proposed regulations add subsection 149(g)(2)(B), “Subsection (g)(1)(B) does not apply to vessels pursuing squid for live bait purposes only during the weekend closure, if the following conditions are met:

1. Lights shall only be used to aggregate squid while actively taking or searching for squid and shall be turned off immediately upon completion of fishing for live bait.
2. All squid taken shall be maintained in a condition to be sold as live bait. Squid taken under this exemption shall not be used as live bait aboard the vessel that took it, and any squid not sold shall be returned to the water prior to the end of the weekend closure.
3. The operator of any vessel intending to utilize this live bait exemption shall provide prior notification via email to LEDMarineNotifications@wildlife.ca.gov prior to the vessel leaving port on that fishing trip. The notification shall include all of the following: operator’s name, vessel name, anticipated fishing date(s), port of departure, expected port of landing, fishing block(s) where live bait fishing activity will occur, live bait method

of take, description of how sales of live bait will occur, Dealer ID number, and, if applicable, Live Bait Dealer ID number.”

This subsection is necessary to lay out the requirements for the commercial take of squid for live bait purposes during the weekend closure for the sustainable management of the fishery and to ensure vessels do not use lights for other purposes, while claiming to be engaged in the take of live bait. Minimizing the use of lights by only allowing their use while actively fishing is important for spawning and completion of life history requirements. Maintaining squid in a condition to be sold as live bait is necessary to ensure freshness of live bait. Advance notification of take is necessary so that the Department has record of those taking market squid for live bait on the weekend.

Amend current subsection 149(h), renumbered as subsection (i), Light Shields.

Current regulation requires that the light scatter of fishing operations be reduced by shielding “the entire filament of each light.” The proposed regulation replaces “of each light” with “or device capable of emitting light”.

This change is necessary to address potential changes to lighting devices in the future.

Amend current subsection 149(l), renumbered as subsection (m), Incidental Take Allowance.

Current regulations specify that other requirements of this Section do not apply to incidental take. The proposed amendment states that other requirements of this Section, except subsection (g), do not apply to incidental take. This amendment was needed to clarify that vessels incidentally taking squid may not use lights.

Additional minor changes are proposed in Section 149 for clarity and consistency in re-numbering subsections, and updating pronouns and cross-references.

Amend Section 149.1. Market Squid Fishery Restricted Access Program.

Amendments are proposed to subsection 149.1(a) to update references to renumbered subsections in Section 149. No other amendments are proposed for Section 149.1.

(b) Goals and Benefits of the Regulation

The California Legislature has declared that the Pacific Ocean and its rich marine living resources are of great environmental, economic, aesthetic, recreational, educational, scientific, nutritional, social, and historic importance to the people of California.

It is the policy of the state to ensure the conservation, sustainable use, and, where feasible, restoration of California’s marine living resources for the benefit of all the citizens of the state. The objectives of this policy include but are not limited to conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of marine living resources that are sustainable; recognizing the importance to the economy and the culture of California of sustainable commercial fisheries; managing marine living resources on the basis of the best available scientific information and other relevant information that the Commission or Department possesses

or receives; and involving all interested parties in marine living resource management decisions.

Consistent with this policy, the proposed changes to weekend closure and requirement of rib line to the market squid regulations reflect what was discussed and agreed upon during the multiyear SFAC process. These changes will help to ensure long-term conservation and sustainability of the market squid resource.

(c) Authority and Reference Sections from Fish and Game Code for Regulation

Section 53.01

Authority: Sections 7071, 7078 and 8425, Fish and Game Code.

Reference: Sections 7071, 7075, 7078, 7083, 7086, 8420 and 8425, Fish and Game Code

Section 53.02

Authority cited: Section 7071, 7078 and 8425, Fish and Game Code.

Reference: Sections 7071, 7075, 7083, 7652, 8420 and 8425, Fish and Game Code.

Section 53.03

Authority cited: Section 7071, 7078 and 8425, Fish and Game Code.

Reference: Sections 7071, 7075, 7082, 7083, 8420 and 8425, Fish and Game Code.

Section 149

Authority: Sections 7078, 7701, 7708, 8026, 8425 and 8429.5, Fish and Game Code.

Reference: Sections 7701, 7708, 8026, 8425, 8429.5, 8429.7, 12159 and 12160, Fish and Game Code

Section 149.1

Authority: Sections 713, 1050, 7071, 7078, 7923, 8026, 8425, 8428 and 8429.5, Fish and Game Code.

Reference: Sections 1050, 7050, 7071, 7701, 7708, 7852.2, 7923, 8026, 8101, 8425, 8428, 8429.5 and 8429.7, Fish and Game Code.

(d) Specific Technology or Equipment Required by Regulatory Change

The proposed change to require a rib line to purse seine nets by December 31, 2030 does not specify a specific rib line that is needed. It must adhere to the specifications described in subsections 53.01(t) and 149(f), which state that the rib line must be rope or non-metallic, a minimum of 36 inches above the headline, and encompass the purse seine net within 60 feet of both ends of the net.

(e) Identification of Reports or Documents Supporting Regulation Change

California Department of Fish and Wildlife. 2005. Final Market Squid Fishery Management Plan, dated March 25, 2025.

California Department of Fish and Wildlife. 2024 Market Squid, *Doryteuthis (Loligo) opalescens*, Enhanced Status Report. Available from:
<https://marinespecies.wildlife.ca.gov/market-squid/>

California Department of Fish and Wildlife. 2024. Squid Fishery Advisory Committee Review of California - Market Squid Fishery Management and Proposed Recommendations. Presented to the Marine Resources committee Meeting of the Fish and Game Commission, July 18, 2024.

(f) Identification of Reports or Documents Providing Background Information

Commission 2024, Staff Summary for July 17-18, 2024 Marine Resource Committee Meeting on Market Squid Fishery Management and Fishery Management Plan (FMP) Review.

Commission 2024, Staff Summary for November 6-7, 2024 Marine Resource Committee Meeting on Market Squid Fishery Management and Fishery Management Plan (FMP) Review.

(g) Public Discussions of Proposed Regulations Prior to Notice Publication

Ten public meetings of the SFAC were held, specifically focused on developing options for market squid fishery management updates. Following those meetings, two meetings of the Commission's Marine Resources Committee included discussions of the proposed recommendations as follows:

- Meeting 1 – February 9, 2023; Virtual
- Meeting 2 – April 18, 2023, Santa Cruz
- Meeting 3 – May 16, 2023, Virtual
- Meeting 4 – July 12, 2023, Virtual
- Meeting 5 – August 15, 2023, Seal Beach
- Meeting 6 – October 6, 2023, Virtual,
- Meeting 7 – November 15, 2023, Virtual
- Meeting 8 – January 26, 2024, Oakland
- Meeting 9 – March 21, 2024, Santa Barbara
- Meeting 10 – May 1-2, 2024, Long Beach
- Marine Resource Committee Meeting – July 18, 2024, Santa Rosa
- Marine Resource Committee Meeting – November 7, 2024, Sacramento

IV. Description of Reasonable Alternatives to Regulatory Action

(a) Alternatives to Regulation Change

No alternatives to changes to sections 53.01, 53.02, and 53.03 were identified.

No alternatives to the market squid fishery closure notification were identified by or brought to the attention of Commission staff.

Other alternatives to the extended weekend closure included extending the closure from Friday at 7am to Monday at 7am, statewide. However, the SFAC expressed that losing one

day of production each week is not cost effective because processors need to employ people five days a week. SFAC members also wanted a specific closure to the Monterey area due to greater concern about the impact on squid spawning and on-the-water conflicts with recreational users.

An alternative to the rib line requirement would be to require a net depth restriction. This would require fishing vessels to use a shallower net to reduce any bottom contact without the need for retrofitting of the purse seine net. This was discussed during the SFAC process, and it was determined that the Department does not have the ability to enforce a net depth restriction. Also, members of the SFAC have said that operators can own several different purse seine nets with varying depths and requiring shorter nets will reduce access to deeper water and will put more pressure on shallower fishing areas.

An alternative subsection (g) - Lights to Aggregate Squid would be to not allow squid lighting on the weekend while fishing for market squid as live bait. This was not considered because it would have a negative effect on the recreational fishing fleet purchasing market squid as live bait from the market squid fishing fleet.

An alternative to prohibit lighting around all or portions of the California Channel Islands was discussed during the SFAC process to additionally protect seabirds. Based on improved seabird breeding and population status in the area, existing marine protected areas around seabird colonies, and potential impacts to the squid fishery, this alternative was determined to be unnecessary.

(b) No Change Alternative

Without the proposed changes, the outstanding issues concerning the regulations currently governing impacts to seafloor habitats, reduced spawning potential, weekend lighting for market squid exemption, and VHF channel 16 notifications would remain unaddressed.

V. Mitigation Measures Required by Regulatory Action

The proposed regulatory action will have no negative impact on the environment; therefore, no mitigation measures are needed.

VI. Impact of Regulatory Action

The potential for significant statewide adverse economic impacts that might result from the proposed regulatory action has been assessed, and the following initial determinations relative to the required statutory categories have been made:

(a) Significant Statewide Adverse Economic Impact Directly Affecting Businesses, Including the Ability of California Businesses to Compete with Businesses in Other States

The Commission anticipates that the proposed regulations will directly impact commercial market squid vessel permit holders and the market squid lighting boats that service those commercial fishing operations. The proposed live bait weekend light use reporting requirements are expected to have a direct economic impact of approximately \$9,988, the total loss to light boats from the closures (\$399,902), the proposed rib line requirements are expected to cost approximately \$885,000, and estimated total economic effect of the proposed closures is \$3,298,987. Combined, the total economic impact from the proposed

regulations is estimated to be \$ 4,593,877, see the economic analysis in the addendum to the economic and fiscal impact statement (STD 399) for more information. The change in costs is not anticipated to affect the competitiveness of the California commercial market squid fishery with other states, as the regulations are intended to protect squid egg beds on the sea floor and preserve the sustainability of the fishery.

(b) Impact on the Creation or Elimination of Jobs Within the State, the Creation of New Businesses or the Elimination of Existing Businesses, or the Expansion of Businesses in California; Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The proposed weekend closures are expected to have a total economic effect of \$3,298,987, which is expected to eliminate up to 19 jobs (3 from the statewide closure and 16 from the Monterey closure). The proposed regulations for rib lines and the reporting requirements for light boats participating in the live bait fishery are not anticipated to have any additional impacts to job creation or elimination.

The Commission does not anticipate that the proposed regulations will affect the creation of new businesses, the elimination of existing businesses, or the expansion of businesses within the state.

The Commission anticipates benefits to the state's environment including but not limited to the following: conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of marine living resources that are sustainable; recognizing the importance to the economy and the culture of California of sustainable commercial fisheries; managing marine living resources on the basis of the best available scientific information and other relevant information that the Commission or Department possesses or receives; and involving all interested parties in marine living resource management decisions. No benefits to the health and welfare of California residents or to worker safety are anticipated as a result of these proposed regulations.

(c) Cost Impacts on a Representative Private Person or Business

The Commission anticipates that the per businesses costs for the proposed regulations is \$46,736 per business using purse seines, with the light boat cost of \$14,639 per vessel, a brail fisher cost of approximately \$2,648 per vessel, and an average small business cost of approximately \$17,746 per vessel. See the economic analysis in the addendum to the STD 399 for further details.

(d) Costs or Savings to State Agencies or Costs/Savings in Federal Funding to the State

The Commission anticipates that the proposed regulatory action will incur a fiscal impact on state government. Enforcement of the proposed regulations will require some of the Department's wildlife officers to undergo additional training to learn the new regulations, which is estimated to be \$27,254.88.

(e) Nondiscretionary Costs/Savings to Local Agencies: None

(f) Programs Mandated on Local Agencies or School Districts: None

(g) Costs Imposed on Any Local Agency or School District that is Required to be Reimbursed Under Part 7 (commencing with Section 17500) of Division 4, Government Code: None

(h) Effect on Housing Costs: None

VII. Economic Impact Assessment

(a) Effects of the Regulation on the Creation or Elimination of Jobs Within the State

The Commission anticipates that the proposed regulations for a weekend closure may impact jobs within the state. The proposed weekend closures are expected to have a total economic effect of \$3,298,987, which is expected to impact up to 19 jobs (3 from the statewide closure and 16 from the Monterey closure). Information for how these estimates were arrived at using the California Ocean Fish Harvester Economic (COFHE) model may be found in the addendum to the STD 399.

(b) Effects of the Regulation on the Creation of New Businesses or the Elimination of Existing Businesses Within the State

The Commission does not anticipate that the proposed regulations will affect the creation of new businesses or the elimination of existing businesses within the state. While the proposed regulations are anticipated to generate some economic impacts, none of the anticipated impacts are expected to make entry into the market squid fishery more difficult or continued activity less viable.

(c) Effects of the Regulation on the Expansion of Businesses Currently Doing Business Within the State

The Commission does not anticipate an expansion of businesses currently doing business within the state as a result of the proposed regulations.

(d) Benefits of the Regulation to the Health and Welfare of California Residents

The Commission does not anticipate impacts on the health and welfare of California residents.

(e) Benefits of the Regulation to Worker Safety

The Commission does not anticipate impacts to worker safety.

(f) Benefits of the Regulation to the State's Environment

The Commission anticipates benefits to the state's environment including but not limited to the following: conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of marine living resources that are sustainable; recognizing the importance to the economy and the culture of California of sustainable commercial fisheries; managing marine living resources on the basis of the best available scientific information and other relevant information that the Commission or Department possesses or receives; and involving all interested parties in marine living resource management decisions.

(g) Other Benefits of the Regulation

None.

Informative Digest/Policy Statement Overview

Unless otherwise specified, all section references in this document are to Title 14 of the California Code of Regulations (CCR).

The market squid fishery is regularly the largest commercial fishery in California, in both volume and ex-vessel value. Managed under the Commission's authority since 2001, the fishery operates within the framework of the Market Squid Fishery Management Plan (FMP) adopted by the Commission in 2004. The FMP defines harvest control rules, a restricted access program, environmental protections, and fishery administration.

While regulations have been periodically adopted to adaptively manage various aspects of the fishery, 2021 marked the initiation of the first comprehensive review of market squid FMP since its adoption. The Department developed a multi-phase management review, supported by the Commission, and anchored in a Squid Fishery Advisory Committee (SFAC). Established by the Department's Director according to Title 14, Section 53.02, the SFAC played a crucial role in assisting with developing and reviewing fishery assessments, management options and proposals, and FMP amendments.

The following proposed changes to market squid regulations reflect Department recommendations and include regulatory changes discussed and agreed upon during the multiyear Squid Fishery Advisory Committee process.

Proposed Amendments

The proposed regulations add a definition of a rib line and will require the use of a purse seine rib line which must be placed above the purse seine leadline after December 31, 2030..

Proposed regulations will extend the current weekend market squid fishery closure from noon to 7am on Friday statewide as well as an additional extension from Sunday at noon to Sunday at 11:59pm in the Monterey Bay Area (between a line due west from Point Lobos (36° 31.461' North Latitude) and a line due west from Pigeon Point (37° 11.000' North Latitude)).

In addition, the Department is proposing changes for an administrative topic not discussed during SFAC meetings addressing the notification method used for closing a fishing season. The proposed regulations replace language in subsection 149(b)(2)(B) related to the responsibility of operators to determine when the seasonal catch limit is expected to be reached and the fishery closed by monitoring VHF/channel 16 with language specifying they should monitor the Department's website wildlife.ca.gov/marine. Additional proposed changes in this subsection regarding what constitutes official notice of the closure replace VHF/channel 16 with the Department's website.

Other changes not discussed during the SFAC process include cleaning up language for taking market squid for live bait during the weekend closure, updating lighting regulation in anticipation of changes in lighting technology, and clarify that a purse seine skiff does not need its own market squid vessel permit.

The proposed regulations clarify that using lights to attract squid is considered a form of take and that such lights generally may not be used during the weekend closures. The exemption for lighting on the weekend when taking market squid as live bait is proposed to be amended

to ensure vessels do not use lights for other purposes, while claiming to be engaged in the take of live bait. The amendment will clarify that lighting on the weekend is only allowed when actively taking market squid for live bait. Revisions to the regulation specify that live market squid must be kept in a condition to be sold as live bait and returned to the water if it is not sold as live bait. Also, vessels engaged in the take of market squid for live bait must notify the Department in advance, to indicate their intent to take live bait during a weekend closure.

The “Gulf of Farallones National Marine Sanctuary” will be updated to “Greater Farallones National Marine Sanctuary”. This change updates the name of the national marine sanctuary currently in Code of Federal Regulations (CFR), Part 922, subpart H.

Proposed amendments also remove the definition the Market Squid FMP. The FMP does not require a definition, as it is described in Section 53.00. Furthermore, it is not necessary to incorporate the document by reference as the FMP is not intended to have the force of law, because it is an informational document rather than a regulation.

Amendments are proposed to subsection 149.1(a) to update references to renumbered subsections in Section 149.

Sections 53.02 and 53.03 are proposed to be repealed as they are either duplicative of existing authority or are general policy statements rather than regulations and therefore are not necessary.

Finally, other ,minor changes are proposed for clarity and consistency.

Benefit of the Regulations:

It is the policy of the state to ensure the conservation, sustainable use, and, where feasible, restoration of California’s marine living resources for the benefit of all the citizens of the state. The objectives of this policy include but are not limited to conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of marine living resources that are sustainable; recognizing the importance to the economy and the culture of California of sustainable commercial fisheries; managing marine living resources on the basis of the best available scientific information and other relevant information that the Commission or Department possesses or receives; and involving all interested parties in marine living resource management decisions.

Consistent with this policy, the proposed changes to market squid regulations reflect what was discussed and agreed upon during the multiyear SFAC process. These changes will help to ensure long-term conservation and sustainability of the market squid resource.

Consistency and Compatibility with Existing Regulations:

The proposed regulations are neither inconsistent nor incompatible with existing state regulations. Section 20, Article IV, of the state Constitution specifies that the Legislature may delegate to the Commission such powers relating to the protection and propagation of fish and game as the Legislature sees fit. The Legislature has delegated to the Commission the power to adopt regulations governing market squid (California Fish and Game Code Section 8425). No other state agency has the authority to adopt regulations governing market squid. The

Commission has reviewed its own regulations and finds that the proposed regulations are neither inconsistent nor incompatible with existing state regulations. The Commission has searched the CCR for any regulations regarding the adoption of market squid regulations; therefore, the Commission has concluded that the proposed regulations are neither inconsistent nor incompatible with existing state regulations.

Proposed Regulatory Language

Section 53.01, Title 14, CCR, is amended to read:

§ 53.01 Definitions.

- (a) *Brail gear, dip nets or scoop nets* means any net attached to a rigid frame operated by hand or mechanical device deployed from the vessel to scoop fish or invertebrates.
- (b) *Daily trip limit* means a routine management measure which may be used to limit take of squid on a per-vessel basis within a calendar day.
- (c) *Drum seine* means a purse seine net which is stored, deployed and retrieved with the aid of a mechanized drum (reel) mounted on the stern of the vessel.
- (d) *Egg escapement* means the number or proportion of a female squid's lifetime supply of eggs that she is able to deposit, on average, before being taken in the fishery.
- (e) *Egg escapement method* means a management tool which may be used to determine whether the fleet is fishing above or below a predetermined sustainable level of exploitation. The method requires establishing a threshold value to ensure that an adequate number of eggs are deposited prior to harvest.
- (f) *Fishing year or fishing season* under the Market Squid FMP means the period April 1 through March 31.
- (g) *Fishery Control Rules* means specific management strategies such as seasonal catch limits, daily trip limits, area closures, time closures, and sustainable levels of egg escapement which provide for a sustainable market squid fishery.
- (h) *Fleet capacity goal* means an optimal number of vessels where the number of vessels matches the available squid resource.
- (i) *Forage* means the role of market squid in the food chain as a critical source of food for higher predators, including birds, fish and marine mammals.
- (j) *Lampara* means a rectangular net constructed with graduated mesh sizes, a definite bunt (bag), and fitted with floats. It is laid out by the fishing vessel in a circle and closed at least partially on the bottom by pulling the headline in advance of the float line.
- (k) *Light boat* means a vessel engaged in the commercial taking or attempting to take market squid which uses bright lights to aggregate squid for commercial purposes including live bait.
- (l) *Market squid* means *Doryteuthis opalescens*.
- ~~(m) *Market Squid Fishery Management Plan (Market Squid FMP)* means Chapters 1 through 5 of the Market Squid Fishery Management Plan approved by the Commission on August 27, 2004, hereby incorporated by reference.~~

~~(n)~~ (m) *National Marine Fisheries Service, NMFS or NOAA Fisheries* means the federal fisheries management agency which is contained in the United States Department of Commerce.

~~(o)~~ (n) *Overfished* is defined at Fish and Game Code Section 97.5, and in the Market Squid FMP also means a condition that may exist when either the egg escapement threshold is not met, or catches of squid exceed any specified allowable level.

~~(p)~~ (o) *Overfishing* is defined at Fish and Game Code Section 98, and in the Market Squid FMP also may mean that harvests of squid are occurring at times when either the egg escapement threshold is not being met, or catches are exceeding specified allowable levels. These catches may not be sustainable.

~~(q)~~ (p) *PFMC or Council* means the Pacific Fishery Management Council established pursuant to the Magnuson-Stevens Fishery Conservation and Management Act.

~~(r)~~ (q) *Point of concern* means one or more of the following conditions affecting market squid that, if found or are expected to exist, may trigger the application or adjustment of one or more management measures by the commission:

- (1) Catch is projected to significantly exceed the current seasonal catch limitation.
- (2) Any adverse or significant change in the biological characteristics of the market squid (age composition, size composition, age at maturity, or recruitment) is discovered.
- (3) An overfished condition exists or is imminent (defined as when the egg-escapement method threshold is not realized in two consecutive years).
- (4) Any adverse or significant change in the availability of market squid as forage or in the status of a dependent species is discovered.
- (5) An error in data or a change to an indicator of stock status is detected that requires adjustment to fishery control rules to ensure sustainable resource management.

~~(s)~~ (r) *Points of concern process* means a process authorizing the commission to apply or adjust fishery management measures at any time during the year based on the confirmation of the existence of one or more resource-based points of concern identified in a fishery management plan pursuant subsection 50.03(a), Title 14, CCR.

~~(t)~~ (s) *Purse seine* means a rectangular net constructed with uniform mesh sizes, without a prominent bunt (bag), and fitted with floats. It is laid out with the end attached to a skiff while the deploying vessel encircles the squid. The end of the net is then brought up to the deploying vessel and is closed ~~on~~ near the bottom by pulling a purse line (draw string) threaded through rings along the headline, preventing the catch from escaping. Purse seines used to take market squid or onboard vessels in possession of market squid are fitted with a rib line.

(t) *Rib line* means a separate line made of soft rope or other non-metallic line that is a minimum of 36 inches above the leadline on a purse seine net. The rib line must encompass the purse seine net within 60 feet of both ends of the net.

(u) *Round haul vessels* mean those that employ the use of lampara, purse seine, and drum seine net gear to commercially harvest squid.

(v) *Seasonal catch ~~limitation~~ limit* means an amount of allowable catch which may be taken within a designated geographic area in a fishing season, specified in short tons and excluding discard mortality. The attainment (or expected attainment) of this limit will cause closure of the directed commercial fishery as specified in regulation.

(w) *Tons* means short tons, and is the standard unit of weight for purposes of describing catches and limits for the market squid fishery, notwithstanding subsection 50.00(c), Title 14, CCR.

(x) *Vessel capacity* means the gross registered tonnage, as listed on a federal Coastal Pelagic Species permit or calculated from length, breadth and depth measurements provided on United States Coast Guard documentation papers.

(y) *Weekend closures* mean a routine management measure which may be used to prohibit take of market squid during certain days of a week.

(z) Definitions contained in Chapter 1, and Article 1 of Chapter 5.5, of Subdivision 1, Division 1, Title 14, CCR, and Chapters 1 and 2 of Division 0.5 of the Fish and Game Code apply to the market squid fishery in addition to definitions of this Section.

Note: Authority cited: Sections 7071, 7078 and 8425, Fish and Game Code. Reference: Sections 7071, 7075, 7078, 7083, 7086, 8420 and 8425, Fish and Game Code.

Proposed Regulatory Language

Section 53.02, Title 14, CCR, is repealed:

~~§ 53.02. Process and Timing.~~

~~(a) Management of market squid stocks will conform to the goals, objectives, criteria, procedures, and Fishery Control Rule guidelines of the Market Squid FMP, and other applicable state and federal laws and regulations.—~~

~~(b) Periodic monitoring and assessment of squid fisheries will be conducted, and, at a minimum, will include the collection and review of reported catches. The department will provide management recommendations to the commission as needed, and in-season if a need is identified.—~~

~~(c) The director may establish and appoint members to an advisory committee to assist the department with development and review of fishery assessments, management options and proposals, and plan amendments.—~~

~~(d) Management measures and actions may be developed, considered, and adopted in compliance with the Administrative Procedure Act and implemented at any time of year to achieve management plan goals and objectives, and may apply to any or all management areas, or portions of management areas at the discretion of the commission.—~~

~~NOTE: Authority cited: Section 7071, 7078 and 8425, Fish and Game Code.—~~

~~Reference: Sections 7071, 7075, 7083, 7652, 8420 and 8425, Fish and Game Code.—~~

Proposed Regulatory Language

Section 53.03, Title 14, CCR, is repealed:

~~§ 53.03. Market Squid Fishery Management Plan (Market Squid FMP) Project.~~

~~(a) The Department's Recommended Proposed Project in the Market Squid FMP involves a combination of limitations on total harvest, regulation on the use of squid fishing gear (including lights), use of time closures to allow for periods of uninterrupted spawning, restricted access and other limits on the commercial fleet capacity, mechanisms to allow for adequate squid escapement, and area closures designed to minimize impact to sensitive non-target species and habitat. These management measures described in the Market Squid FMP will be utilized in managing the squid fishery toward meeting goals and objectives of the Market Squid FMP.~~

~~(b) Other management measures as described in the Market Squid FMP, including but not limited to vessel trip limits, squid replenishment areas, seasonal closures, and marine protected areas may be used as needed to achieve the goals and objectives of the Market Squid FMP.~~

~~(c) A fishery management measure may be adopted by the commission instead of, or in addition to, measures included in the adopted Market Squid FMP Project where specified in statute or state or federal regulation.~~

~~(d) Consistent with the goals of the Restricted Access program, the Commission established a sixth permit class for Non-Transferable Market Squid Light Boat Permits in addition to the original five permit classes and an experimental permit class identified in the discussion of the program in the Market Squid Fishery Plan.~~

~~NOTE: Authority cited: Section 7071, 7078 and 8425, Fish and Game Code.~~

~~Reference: Sections 7071, 7075, 7082, 7083, 8420 and 8425, Fish and Game Code.~~

Proposed Regulatory Language

Section 149, Title 14, CCR, is amended to read:

§ 149. Commercial Taking of Market Squid.

Requirements of this Section apply both to vessels taking squid and to vessels attracting squid with lights for the purpose of commercial take. Incidental commercial take of market squid that meets the criteria specified in subsection ~~(l)-(m)~~ below, and commercial take of market squid for live bait as described in subsection ~~(m)-(n)~~ below are not subject to the requirements of this Section, unless expressly specified.

(a) Permit Required. No person shall take, land, or attract squid by light for commercial purposes, except as provided in subsections (a)(1), ~~(l)~~ and (m), and (n) below, unless the owner of that vessel has a valid market squid permit issued pursuant to Section 149.1 of these regulations for use on that vessel that has not been suspended or revoked.

(1) A market squid permit is not required for the seine skiff of a permitted vessel. For the purposes of this section, a seine skiff is a vessel that does not use lights to attract squid and its primary purpose is to assist the deployment of a net for a permitted vessel.

(b) Seasonal Catch ~~Limitation~~-Limit.

(1) For the period from April 1 through March 31 of the following year, a total of not more than 118,000 short tons of market squid may be taken statewide for commercial purposes.

(2) Closure Process

(A) The department shall estimate, from the current trend in landings, when the Seasonal Catch Limit will be reached, and will publicly announce the effective date of closure of the directed commercial fishery on the department's website at: wildlife.ca.gov/marine. ~~VHF/channel 16 between the hours of 10:00 p.m. and 12:00 a.m. (midnight).~~

(B) It shall be the responsibility of all operators of permitted market squid vessels to monitor ~~VHF/channel 16~~ the department's website at: wildlife.ca.gov/marine to determine when the Seasonal Catch Limit is expected to be reached and the fishery closed. Any announcement issued or made by the department on ~~VHF/channel 16~~ its website shall constitute official notice.

(c) Time Closures. North of a westerly extension of the United States — Republic of Mexico boundary line:

(1) Fishing Days: Market squid may not be taken for commercial purposes ~~between 1200 from 0700 hours (noon) on Friday and through 1200 hours (noon) on Sunday of each week, except between a line due west from Point Lobos (36° 31.461'~~

North Latitude) and a line due west from Pigeon Point (37° 11.000' North Latitude) where market squid may not be taken for commercial purposes from 0700 hours on Friday through 2359 hours on Sunday of each week.

(2) Seasonal Closure: When the Seasonal Catch Limit defined in subsection (b) has been reached and the commercial fishery is closed, squid may be taken for commercial purposes only incidentally to the take of other target species and subject to the limitations defined in subsection ~~149(l)~~ (m) below or for live bait as defined in subsection ~~149(m)~~ (n) below through March 31.

(d) Closed Areas for Seabirds. Market squid may not be taken for commercial purposes utilizing attracting lights in all waters of the ~~Gulf of the Greater~~ Farallones National Marine Sanctuary. Boundaries of the Sanctuary are defined as those in effect on August 27, 2004, pursuant to Title 15, Code of Federal Regulations (CFR), Part 922, Subpart H. This regulation also applies to vessels pursuing squid for live bait purposes.

(e) Records. Pursuant to Section 190 of these regulations, any operator of a commercial market squid vessel, or person who possesses a valid Market Squid Vessel Permit, Market Squid Brail Permit, or Market Squid Light Boat Permit shall complete and submit an accurate record of ~~his/her~~ their squid fishing, lighting, or brailing activities on a form (Market Squid Vessel Logbook — DFW 149a (Rev. 05/01/15), or Market Squid Light/ Brail Boat Logbook — DFW 149b (Rev. 05/01/15), which are located in Appendix A of Subdivision 1 of Division 1 of Title 14, CCR) provided by the department, as appropriate to the type of fishing activity. Logbook records shall be transmitted to the department on or before the 10th day of each month following the month that fishing activity occurred.

(f) Rib Line. After December 31, 2030, it is unlawful to take market squid for commercial purposes using a purse seine net that is not pursed using a rib line as defined in Section 53.01. All purse seine nets onboard any vessel taking or possessing market squid for commercial purposes must have a rib line attached and the rib line must be used to purse the net. A rib line must be made of soft rope or other non-metallic line. All rib lines must be made available for inspection upon demand by authorized Department personnel pursuant to Fish and Game Code Section 2012.

~~(f)~~ (g) Use of Lights to Aggregate Squid.

(1) General Regulations. It is unlawful to attract squid by light except as authorized under permits described in subsection 149.1(b) of these regulations.

(A) Lights used to aggregate squid are considered a form of take. Lights commonly used to aggregate squid that are turned on or in use are prima facie evidence that the vessel's operator and crew are attempting to attract squid for commercial purposes.

(B) Lights used to aggregate squid for commercial purposes shall not be turned on or in use during weekend closures as defined by subsection (c)(1) of this section.

(2) Exceptions for Live Bait Purposes.

(A) Notwithstanding subsection (g)(1), This regulation does not apply to seine skiffs of a permitted vessel, or to vessels pursuing squid for live bait purposes only are not required to possess a permit described in subsection 149.1(b).

(B) Subsection (g)(1)(B) does not apply to vessels pursuing squid for live bait purposes only during the weekend closure, if the following conditions are met:

1. Lights shall only be used to aggregate squid while actively taking or searching for squid and shall be turned off immediately upon completion of fishing for live bait.

2. All squid taken shall be maintained in a condition to be sold as live bait. Squid taken under this exception shall not be used as live bait aboard the vessel that took it, and any squid not sold shall be returned to the water prior to the end of the weekend closure.

3. The operator of any vessel intending to utilize this live bait exception shall provide prior notification via email to LEDMarineNotifications@wildlife.ca.gov prior to the vessel leaving port on that fishing trip. The notification shall include all of the following: operator's name, vessel name, anticipated fishing date(s), port of departure, expected port of landing, fishing block(s) where live bait fishing activity will occur, live bait method of take, description of how sales of live bait will occur, Dealer ID number, and, if applicable, Live Bait Dealer ID number.

~~(g)~~(h) Maximum Wattage. Each vessel fishing for squid or lighting for squid shall utilize a total of no more than 30,000 watts of lights to attract squid at any time.

~~(h)~~(i) Light Shields. Each vessel fishing for squid or lighting for squid will reduce the light scatter of its fishing operations by shielding the entire filament ~~of each or device~~ capable of emitting light used to attract squid and orienting the illumination directly downward, or providing for the illumination to be completely below the surface of the water. The lower edges of the shields shall be parallel to the deck of the vessel.

~~(i)~~(j) Forfeiture. Squid landed or possessed in violation of this Section or any other provision of the Fish and Game Code or these regulations shall be forfeited to the department. The squid shall be sold or disposed of in a manner to be determined by the department. The proceeds from all sales shall be paid into the Fish and Game Preservation Fund.

~~(j)~~(k) Citations for violations of this Section may be issued to the vessel operator, crewmembers, and/or the holder of a market squid permit issued pursuant to Section 149.1 ~~of these regulations~~.

~~(k)~~(l) Exemption from Tidal Invertebrate Permit. Operators and crewmembers of a commercial market squid vessel or light boat operating under the provisions of a commercial market squid permit are not required to possess a Tidal Invertebrate Permit, but are subject to the provisions of Section 123 ~~of these regulations~~.

~~(l)~~(m) Incidental Take Allowance. Pursuant to this subsection, market squid may be taken for commercial purposes incidentally when engaged in fishing activities for other target species. Other requirements of this Section, except subsection (g), do not apply to incidental take. Incidentally-taken squid shall meet all of the following criteria:

(1) The volume of squid landed or possessed on a vessel shall not exceed 2 tons per trip.

(2) Market squid taken incidentally to other fisheries shall not exceed 10 percent of the total volume by weight of all fish landed or possessed on a vessel.

~~(m)~~(n) Exemption for Live Bait. Squid taken for live bait purposes shall only be possessed for use as live bait or sold as live bait. Other requirements of this Section do not apply to take of live squid for bait, unless expressly specified.

NOTE: Authority cited: Sections 7078, 7701, 7708, 8026, 8425 and 8429.5, Fish and Game Code.

Reference: Sections 7701, 7708, 8026, 8425, 8429.5, 8429.7, 12159 and 12160, Fish and Game Code.

Proposed Regulatory Language

Section 149.1, Title 14, CCR, is amended to read:

§ 149.1 Market Squid Fishery Restricted Access Program.

(a) Permit Required. On and after April 1, 2005, no person shall take, land, or attract squid by light for commercial purposes, except as provided in subsections ~~149(l) and 149(m)~~ 149(a)(1), 149(m) and 149(n), unless the owner of that vessel has a valid market squid permit for use on that vessel that has not been suspended or revoked.

[... No changes to subsections (b) through (r) ...]

Authority cited: Sections 713, 1050, 7071, 7078, 7923, 8026, 8425, 8428 and 8429.5, Fish and Game Code. Reference: Sections 1050, 7050, 7071, 7701, 7708, 7852.2, 7923, 8026, 8101, 8425, 8428, 8429.5 and 8429.7, Fish and Game Code.

STD399 ADDENDUM

Amend Sections 53.01, 149 and 149.1, Repeal Sections 53.02 and 53.03, Title 14, California Code of Regulations Re: Commercial Taking of Market Squid

Background

The market squid fishery is regularly the largest commercial fishery in California, in both volume and ex-vessel value. Managed under the Fish and Game Commission's (Commission) authority since 2001, the fishery operates within the framework of the market squid fishery management plan (FMP) adopted by the Commission in 2004. The FMP defines harvest control rules, a restricted access program, environmental protections, and fishery administration.

While regulations have been periodically adopted to adaptively manage various aspects of the fishery, 2021 marked the initiation of the first comprehensive review of the Market Squid FMP since its adoption. The Department of Fish and Wildlife (the Department) developed a multi-phase management review, supported by the Commission, anchored in a Squid Fishery Advisory Committee (SFAC). Established by the Department's Director according to Section 53.02, the SFAC played a crucial role in assisting with developing and reviewing fishery assessments, management options and proposals, and FMP amendments.

During the final SFAC meeting in May 2024, the Department presented draft recommendations to SFAC and adjusted the recommendations to reflect discussion points and expression of support from members. The SFAC recommended regulation changes, as well as non-regulatory actions.

In addition, the Department recommends changes for an administrative topic not discussed during SFAC meetings addressing the notification method used for closing a fishing season. As specified in current regulation (subsections 149 (b)(2)(A) and (B)), the Department is to notify the United States Coast Guard (USCG) to broadcast on VHF Channel 16 any upcoming closures to the market squid fishery. However, the USCG has indicated in a letter to the Department that it will no longer post notices via VHF 16 Broadcast Notice to Mariners because the "communication tools are reserved for important navigational safety information and deficiencies in aids to navigation". For market squid fishermen to be informed that there will be a closure, the proposed regulations specify that the Department will notify fishermen by posting to the Department's website.

The proposed regulations will require the use of a purse seine rib line which must be placed above the purse seine leadline. Department sampling data indicate that current purse seine fishing practices allow the net to scrape the seafloor in relatively shallow fishing areas and may increase benthic species bycatch. Requiring a rib line on purse seine nets will reduce contact with the seafloor. In addition, the proposed regulations will require the rib line to be made of non-metallic material instead of cable or chains (i.e., no metal lines), which will also reduce impacts to sea floor. This change mitigates

potential impacts to sandy bottom habitat and enhances sustainability by protecting squid egg beds and other benthic species.

The proposed regulations will extend by five hours the current weekend market squid fishery closure from noon to 7am on Friday statewide as well as an additional 12-hour extension from Sunday at noon to Sunday at 11:59 pm in the Monterey Bay Area (between a line due west from Point Lobos [36° 31.461' North Latitude] and a line due west from Pigeon Point [37° 11.000' North Latitude]). This change will increase the uninterrupted spawning time for market squid, which will benefit squid reproduction and spawning success. Department analyses during the SFAC process showed a difference between the northern and southern fishery areas, supporting the difference in closure end time proposed.

The exemption for lighting on the weekend when taking market squid as live bait was amended to make the provision clearer and more enforceable. The change is intended to ensure vessels do not use lights for other purposes, while claiming to be engaged in the take of live bait. The amendment clarifies that lighting on the weekend is only allowed when actively taking market squid for live bait. Revisions to the regulation specify that live market squid must be kept in a condition to be sold as live bait and returned to the water if it is not sold as live bait. Vessels engaged in the take of market squid for live bait must also notify the Department in advance to indicate their intent to take live bait during a weekend closure.

ECONOMIC IMPACT STATEMENT

A. Estimated Private Sector Cost Impacts

Answer 1. a. Impacts businesses and/or employees **b.** Impacts small businesses **e.** Imposes reporting requirements:

The proposed regulations will require commercial fishers for squid to use a purse seine rib line which must be placed above the purse seine leadline, extend the current weekend market squid fishery closure, and require vessels engaged in the take of market squid for live bait to notify the Department in advance via email to indicate their intent to take live bait during a weekend closure.

Answer 3. Enter the total number of businesses impacted. Describe the types of businesses. Enter the number or percentage of total businesses impacted that are small businesses:

Department landing data indicates that 59 vessels landed squid using purse seines last year (2024), 28 of which had revenue under \$1M and can be considered small businesses. Additionally, the 28 light boats affected by the closures in the proposed regulations are considered small businesses, and their revenue is generally estimated as about 20% of the landings value from the fishing vessels they assist. Finally, there were 48 vessels that fished for market squid using brail gear, all of which would be considered small businesses. In total, 104 out of the 135 businesses that the Commission anticipates will be affected by the proposed action can be considered small businesses.

Answer 6. Enter the number of jobs created and eliminated. Describe the types of jobs or occupations impacted.

The proposed expansion of statewide and Monterey closures may lead to the elimination of up to 19 jobs in the market squid commercial fishery. These jobs would mostly consist of deckhands and other support roles, see Tables 1 and 2 in Section B, Estimated Costs, for a complete description of how the value was estimated for the proposed closures.

B. Estimated Costs

Answer 1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime?

The immediate costs for installing the rib lines prescribed by these proposed regulations for purse seines are estimated by Marine Region staff to be approximately \$10,000 if the owner bought materials and installed the rib lines themselves and \$20,000 if they bought materials and hired someone to install rib lines. The cost across the 59 vessels that reported taking squid commercially by purse seines in 2024 is represented by the following:

Low estimate = \$10,000 x 59 vessels = \$590,000

High estimate = \$20,000 x 59 vessels = \$1,180,000

Average estimate = \$15,000 x 59 vessels = \$885,000

Currently the Department only possesses economic multipliers from the California Ocean Fish Harvester Economic (COFHE) model¹ for measuring the indirect and induced effects of the change in output (landings value) for commercial fisheries. The effects of a closure are measured in direct effects, indirect effects, and induced effects. The direct effects measure the response for a given industry per dollar of final demand for that same industry (in this case, income to lightboat or fishing vessels). Indirect effects measure the effect on other businesses that receive and distribute the harvest and are indirectly affected through changes in supply chain activity generated by the direct effects. Induced effects measure the effect on individuals who receive income from the above-mentioned business types who would also be affected should their income from the fishery and supporting businesses be reduced. These three impacts combine to give us the total economic effect.

Using the COFHE multipliers developed for the California commercial purse seine fisheries, the total statewide cost impacts (losses in total economic output) for the proposed five-hour expansion of the Friday closure of the market squid fishery are estimated to be \$550,740, with an impact to approximately 3 jobs and direct impacts of approximately \$283,326 to the 59 purse seine fishing vessels and the 48 brail fishing vessels affected by the proposed regulations, and is highlighted in Table 1. The total economic impacts for the proposed twelve-hour expansion of the Monterey Sunday

¹ Minnesota IMPLAN Group, Inc., 2014 with California Ocean Fish Harvester Economic (COFHE) Model multipliers. Available from: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=30738&inline>

closure of the market squid fishery are estimated to be \$2,748,247, with an impact to approximately 16 jobs, and is highlighted in Table 2. It should be noted that the Department's landing data indicates that only purse seine fishers are affected by the Monterey Sunday closure as there were no significant landings from brail fishers.

Table 1: Estimated 2025 Statewide Friday Closure Impacts – Purse Seine and Brail Vessels

COFHE Multipliers	Economic Output	Employment
Direct	\$283,325.58	1.19
Indirect	\$29,645.77	0.19
Induced	\$237,768.81	1.75
Total Impact	\$550,740.16	3.14

88,067.70

6,412.00

0.07

1,340,375.73	267,485.80	0.20
792,706.20	129,616.40	0.16
972,145.80	158,906.40	0.16
654,831.69	113,008.22	0.13

All of the 28 affected light boats are considered small businesses, and their revenue is generally estimated as about 20% of the landings value from the fishing vessels they assist, meaning that a fishery closure directly impacts their income. Based on the estimated value of landings for the proposed statewide and Monterey closures this represents a total value of approximately \$399,902 in direct effects, as seen in Table 3. Dividing the combined value of the light boat income loss among the 28 light boats yields a cost of \$14,282 per vessel.

Table 3: Estimated Light Boat Income Impact from Closures

	5-year Avg of Value	Est. Light Boat Income
Statewide Closure	\$283,325.58	\$56,665
Monterey Closure	\$1,716,184.76	\$343,237
Combined	\$1,999,510.34	\$399,902

Both the cost of rib line installation for commercial market squid vessels and the value

of lost income to light boats from the proposed closures represent direct effects to vessel income, and do not include the indirect effects or induced effects of those direct impacts because the COFHE model does not include multipliers for light boat activity, only for the effects related to landings.

Lastly, the reporting requirement for vessels targeting squid to notify the Department in advance prior to taking market squid for live bait during a weekend closure will impose a small reporting cost that is primarily expected to affect the 28 light boats. Program staff estimate that notifying the Department via email will require approximately 15 minutes of the vessel captain's time. Using California hourly wage estimates for First Line Supervisors of Farming, Fishing, and Forestry Workers from the U.S. Bureau of Labor Statistics ² (\$27.43/hour) yields a reporting cost of approximately \$6.86 per vessel per weekend closure. If we overestimate the cost impact and assume that up to 28 vessels will choose to participate during all of the weekend closures in a year, then the high-end of the total cost could be represented as the following:

28 vessels x 52 weekends x \$6.86 = approximately \$9,988 per year (approximately \$357 per vessel)

Combined with the light boat income loss of \$14,282 per vessel, the cost to each light boat vessel is approximately \$14,639.

Taking the value of the loss of landings from the proposed Friday closure (~ \$283,326) and dividing it by the 107 vessels (59 purse seine and 48 brail) yields a per vessel cost of approximately \$2,648 – this represents the only cost impact that brail fishers are likely to face. Doing the same with the Sunday closure (~ \$1,716,185) and dividing it by the 59 affected purse seine vessels yields a per vessel cost of approximately \$29,088. Combining this value with the estimated per vessel average cost of \$15,000 for rib line installation for vessels using purse seines and the estimate for the statewide closure impact yields an estimated cost of approximately \$46,736 per business that uses purse seine.

Approximately 28 of the vessels that fish for market squid using purse seines and all 48 of the vessels that fish using brail are considered small businesses, as well as the 28 light boats, for a combined 104 small businesses affected by the proposed regulations. Averaging out the cost of \$46,736 per purse seine vessel with the light boat per vessel cost of \$14,639 and the brail per vessel cost of \$2,648 yields an average small business cost of approximately \$17,746 per vessel using the following weighted average:

$$[(\$46,736 \text{ average cost per purse seine vessel} \times 28 \text{ purse seine vessels}) + (\$14,639 \text{ average cost per light boat} \times 28 \text{ light boat vessels}) + (\$2,648 \text{ average cost per brail vessel} \times 48 \text{ brail vessels})] / 104 \text{ small business vessels} = \$17,746 \text{ per small business vessel}$$

A similar weighted average approach can be used for estimating the average among typical businesses:

² [Farming, Fishing, and Forestry Occupations](#), U.S. Bureau of Labor Statistics

$$[(\$46,736 \text{ average cost per purse seine vessel} \times 59 \text{ purse seine vessels}) + (\$14,639 \text{ average cost per light boat} \times 28 \text{ light boat vessels}) + (\$2,648 \text{ average cost per brail vessel} \times 48 \text{ brail vessels})] / 135 \text{ vessels} = \$24,404 \text{ per vessel.}$$

The combined cost of the total economic effects of the proposed Friday closure (~\$550,740) and Sunday Closure (\$2,748,247), the estimate of the total annual reporting costs (\$9,988), the total loss to light boats from the closures (\$399,902), and the costs of rib line implementation (\$885,000) is approximately \$4,593,877.

C. Estimated Benefits

Answer 1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment:

It is the policy of the state to ensure the conservation, sustainable use, and, where feasible, restoration of California's marine living resources for the benefit of all the citizens of the state. The objectives of this policy include but are not limited to conserving the health and diversity of marine ecosystems and marine living resources; allowing and encouraging only those activities and uses of marine living resources that are sustainable; recognizing the importance to the economy and the culture of California of sustainable commercial fisheries; managing marine living resources on the basis of the best available scientific information and other relevant information that the Commission or Department possesses or receives; and involving all interested parties in marine living resource management decisions.

Consistent with this policy, the proposed changes to market squid regulations reflect what was discussed and agreed upon during the multiyear SFAC process. These changes will help to ensure long-term conservation and sustainability of the market squid resource.

Benefits of the rib lines include reduced potential impact to sea floor habitats, including squid egg beds, which would lead to increased sustainability of market squid and potentially improved sea floor conditions.

Answer 3. What are the total statewide benefits from this regulation over its lifetime?

While the proposed regulations may not necessarily increase the value of the fishery, they may allow for sustainable conditions for the fishery to persist and preserve its continued use.

Without the proposed changes, the outstanding issues concerning the regulations currently governing impacts to seafloor habitats, reduced spawning potential, and VHF/channel 16 notifications would remain unaddressed. In particular, the potential of the rib line requirements to prevent damage to the sea floor may reduce the negative impact to squid beds, which would lead to increased sustainability of market squid and potentially improved sea floor conditions.

The proposed action will help to ensure long-term conservation and sustainability of the market squid fishery. The value of California's market squid landings is estimated to be

\$42,981,272 based on the five-year average of annual landings data gathered by the Department, as seen in Table 4.

Table 4: Five-Year Value of Market Squid Fishery

Season	MLS catch estimate (pounds)	MLDS season total landed (Pounds)	MLDS season ex-vessel value
2019-2020	25,000	28,586,000	\$15,202,556
2020-2021	380,700	36,562,500	\$25,126,815
2021-2022	500,000	114,618,000	\$75,117,998
2022-2023	39,600	100,825,500	\$67,380,949
2023-2024	68,000	55,264,000	\$32,078,042
5-year AVG	202,660	67,171,200	\$42,981,272

Using the COFHE multipliers developed for the California commercial purse seine fisheries, the statewide value in total economic output for the market squid fishery is estimated to be \$83,548,801.58, as seen in Table 5. Maintaining the sustainability for market squid fishery under the proposed regulations may not necessarily add to the value of the fishery but rather allow for its continued use.

Table 5: Estimated Value of CA Market Squid Fishery (5-year Avg)

OC-15 Multipliers	Economic Output
Direct	\$42,981,272
Indirect	\$4,497,345
Induced	\$36,070,184
Total Impact	\$83,548,802

D. Alternatives to The Regulation

Answer 2. Summarize the total statewide costs and benefits from this regulation and each alternative considered.

No alternatives to the market squid fishery closure notification were identified by or brought to the attention of Commission staff.

Other alternatives to the extended weekend closure included extending the closure from Friday at 7am to Monday at 7am, statewide. However, the SFAC expressed that losing one day of production each week is not cost effective because processors need to

employ people five days a week. SFAC members also wanted a specific closure to the Monterey area due to greater concern about the impact on squid spawning and on-the-water conflicts with recreational users.

An alternative to the rib line requirement would be to require a net depth restriction. This would require fishing vessels to use a shallower net to reduce any bottom contact without the need for retrofitting of the purse seine net. This was discussed during the SFAC process, and it was determined that the Department does not have the ability to enforce a net depth restriction. Also, members of the SFAC own several different purse seine nets with varying depths and requiring shorter nets will reduce access to deeper water and will put more pressure on shallower fishing areas.

FISCAL IMPACT STATEMENT

A. Fiscal Effect on Local Government

Answer 5. No fiscal impact.

The Department anticipates that the proposed regulatory action will have no fiscal effect on any local government entity or program.

B. Fiscal Effect on State Government

Answer 1. Additional expenditures in the current fiscal year. (Approximately)

\$27,254.88

The Commission anticipates that the proposed regulatory action will incur a fiscal impact on state government. Enforcement of the proposed regulations will require some of the Department's wildlife officers to undergo additional training to learn the new regulations, learn what a rib line is, learn how to locate and inspect a rib line, understand how rib lines are used in the field by fishing boat operator and crew, and learn what it looks like if a boat operator or crewmember is not using the rib line to purse the net. The Department anticipates that 6 Lt. Specialists, 8 Lt. Supervisors, and 32 Wardens will need to go through approximately 8 hours of additional training, which will include a combination of online, classroom, and field training. The fiscal impact of the training is anticipated to be \$27,254.88 (Table 6: Fiscal Impact of Additional Marine Enforcement Division [MED] Officer Training), and the Department anticipates that this cost will be absorbed within its existing budget.

Table 6: Fiscal Impact of Additional MED Wildlife Officer Training

Classification	Hours	Rate	# of Officers	Total
FISH AND GAME LIEUTENANT (SPECIALIST)	8	\$91.05	6	\$4,370.40
FISH AND GAME LIEUTENANT (SUPERVISOR)	8	\$99.13	8	\$6,344.32

FISH AND GAME WARDEN, DEPARTMENT OF FISH AND GAME	8	\$64.61	32	\$16,540.16
				\$27,254.88

Source: CalHR CDFW Salary Data, October 3, 2024

The Commission does not anticipate that any other state agencies or programs will be affected by this regulatory action.

C. Fiscal Effect on Federal Funding of State Programs

Answer 3. No fiscal impact.

The proposed regulatory action will not have a fiscal effect on federal funding of state programs.



Market Squid Proposed Regulations and Fishery Management Plan Amendment

17 April 2025

Presented to:

CA Fish and Game Commission

Presented by:

Trung Nguyen

**Environmental Scientist
Marine Region**



Outline

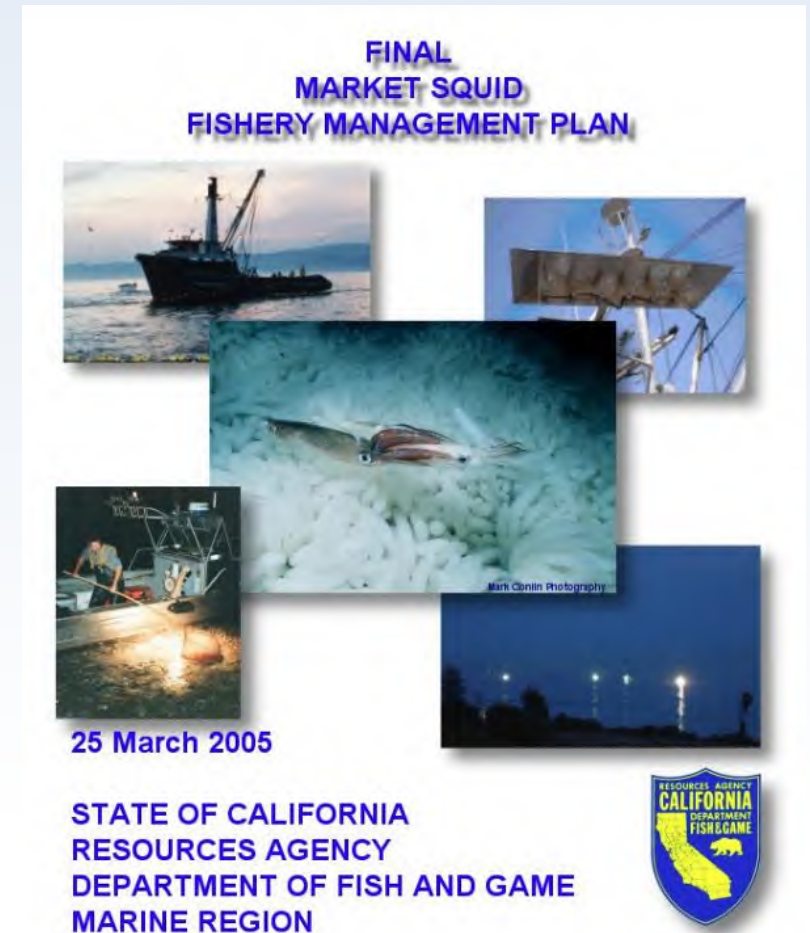
- Current Market Squid Fishery Management Plan (FMP)
- Squid Fishery Advisory Commission (SFAC) Process
- SFAC and Department Recommendations
- Proposed Changes to Market Squid Regulations
- Proposed FMP Amendment 1





Market Squid FMP

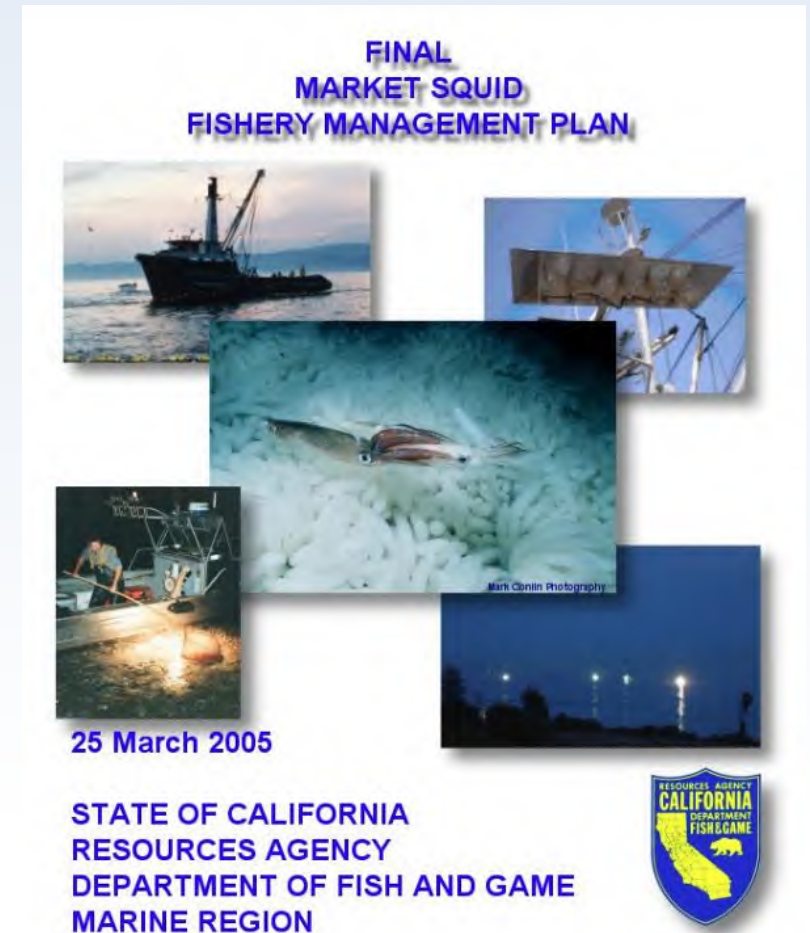
- Market Squid FMP adopted by Commission 2004 – Implemented 2005
- Goals
 - Ensure long term conservation and sustainability
 - Reduce overfishing
 - Management responsive to environmental and socioeconomic changes





Original FMP Management Measures

- Established:
 - Fishery Control Rules
 - Seasonal catch limit
 - Weekend closures
 - Light shield requirements and wattage limits
 - Monitoring programs
 - A restricted access program
 - Lighting restrictions within the Greater Farallones National Marine Sanctuary.





Squid Fishery Advisory Committee

SFAC Charge

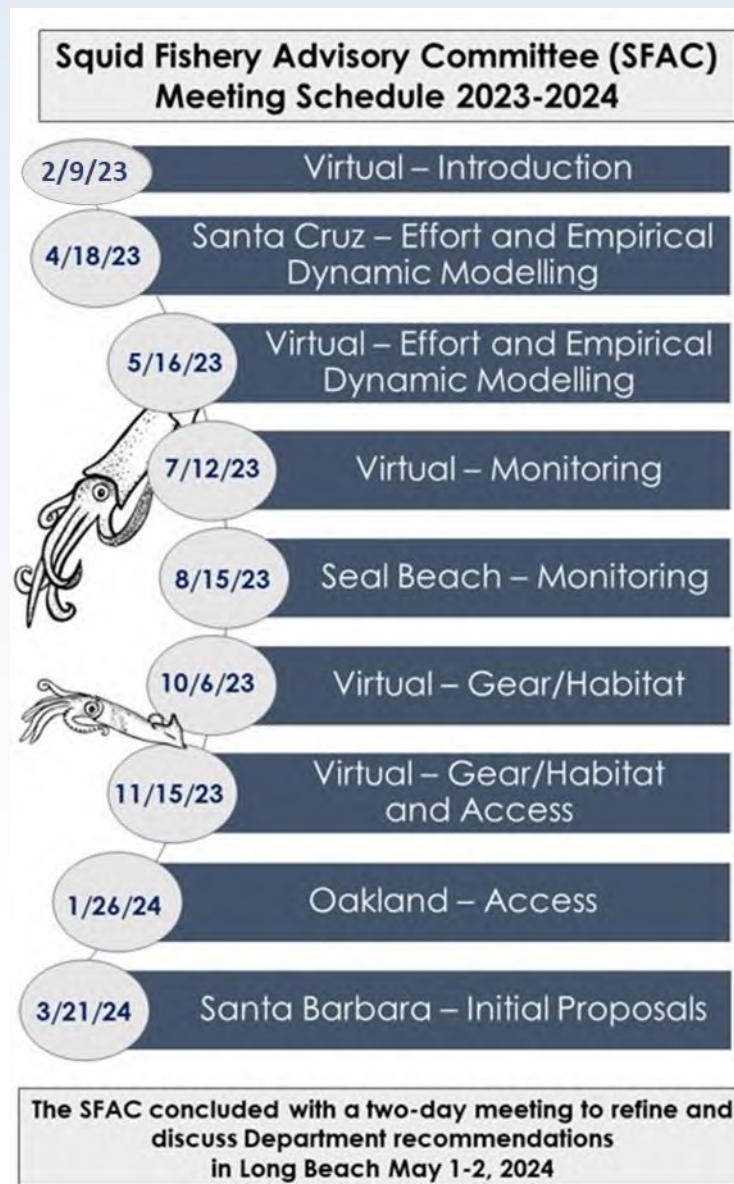
Review and advise the California Department of Fish and Wildlife on potential changes to California market squid fishery management

SFAC Members

Fishing Community
Conservation
Non-Consumptive
Research

Squid Fishery Management Web Page

<https://wildlife.ca.gov/Conservation/Marine/MSFMP>





SFAC Recommendations

- FMP amendment and regulatory changes
 - Extended weekend closures
 - Rib line and rope purse line requirement





Department Recommendations

- FMP amendment and regulatory changes
 - Extended weekend closures
 - Rib line and rope purse line requirement
 - Fishery closure notification change
 - Squid lighting clarity





Market Squid Regulation Changes

- **Definitions** (Section 53.01, Title 14, CCR)
 - Update and add new
- **Commercial Take of Market Squid** (Section 149)
 - Fishery closure notification
 - Weekend closure
 - Rib line and rope purse line
 - Use of lights to aggregate squid
- **Market Squid Fishery Restricted Access Program** (Section 149.1)
 - Update cross-references to Section 149
- **Process and Timing and Market Squid FMP Project** (Sections 53.02 and 53.03)
 - Repeal (outdated)



Weekend Closure Extension

Department Recommendation:

- Extend weekend closure
 - 7am Friday to noon Sunday, Statewide

Current Closure

Proposed Closure



- Monterey Bay Area extends to Sunday at midnight

- Area: Point Lobos (36° 31.461' North Latitude) and Pigeon Point (37° 11.000' North Latitude)





Monterey Bay Area Weekend Closure

Monterey Bay Area

Area: Point Lobos ($36^{\circ} 31.467'$ North Latitude) and Pigeon Point ($37^{\circ} 11.000'$ North Latitude)

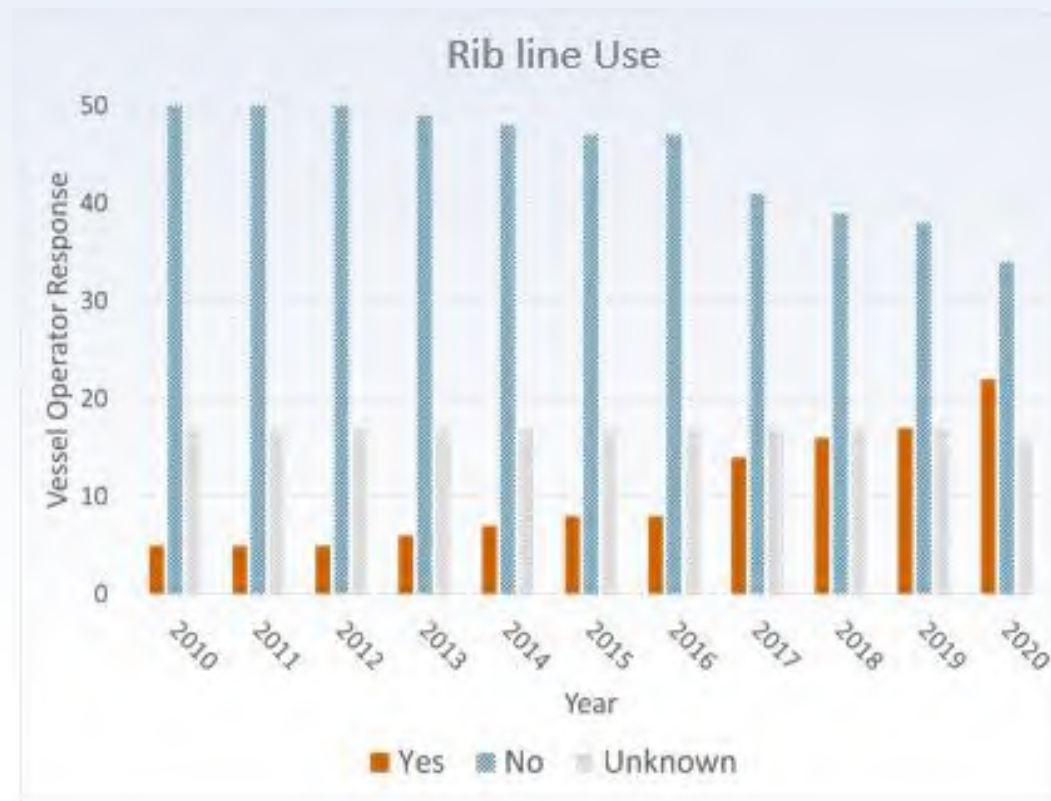




Rib line Requirement

Department Recommendation:

- Help protect seafloor habitat
- Require a non-metallic rib line
 - Rib line use continues to increase in the fleet
 - Dockside sampling indicates rib lines reduce bycatch for most benthic species



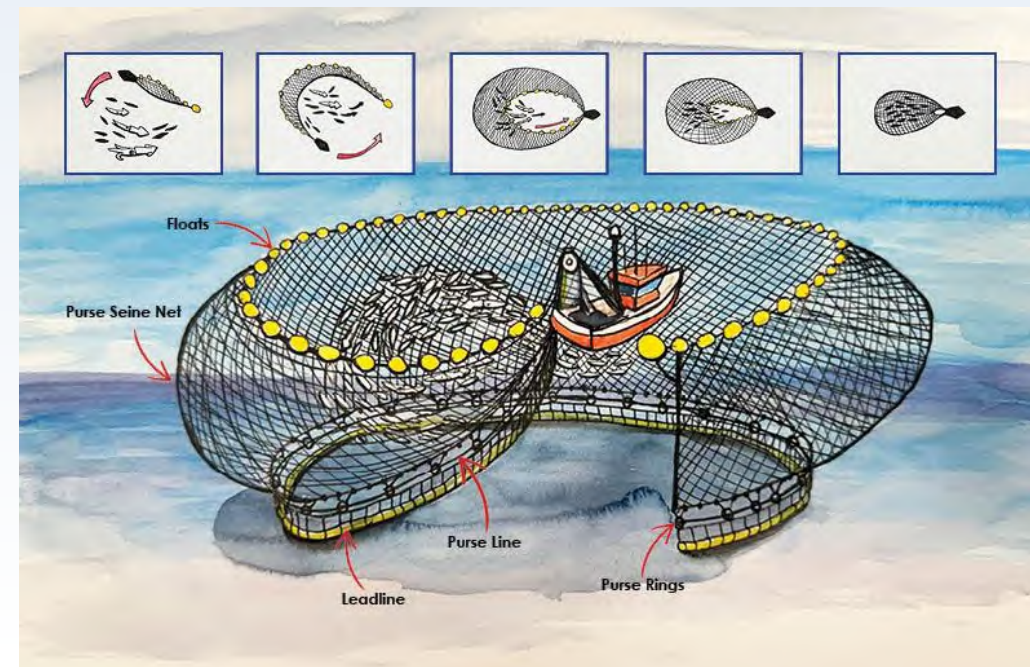
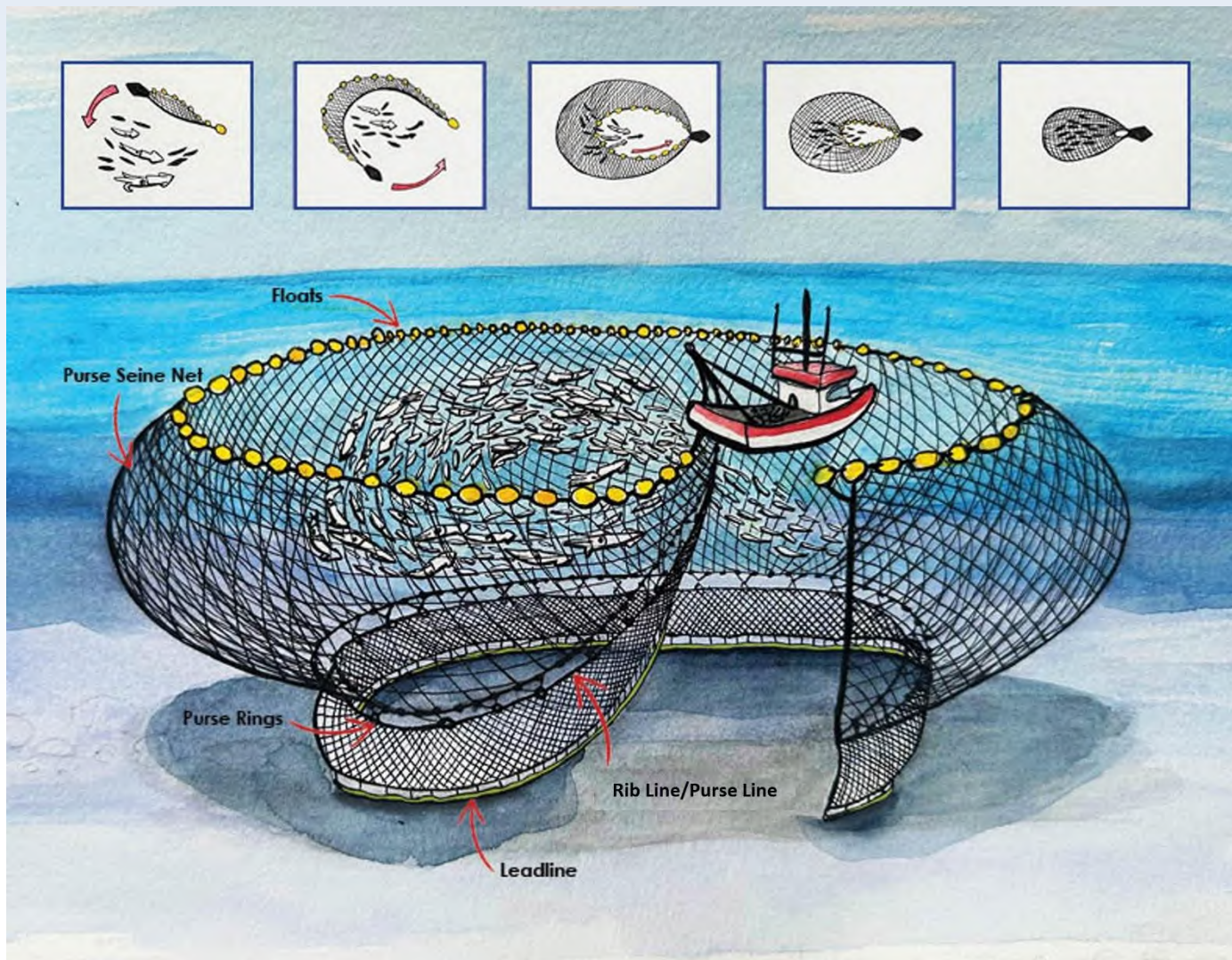


Rib Line Requirement

- Require a rib line
- Must be used to purse net
- Must be at least 36" above the headline
- Must encompass purse seine net
- Rib line must be rope (no cable or chain)
- Required after December 31, 2030



Rib Line Diagram





Use of Lights to Aggregate Squid

- Weekend lighting exemption amended for clarity
 - Only while actively taking market squid for live bait
 - Unsold squid must be released into water
 - Department notification via email before trip





First Ever Commission FMP Amendment

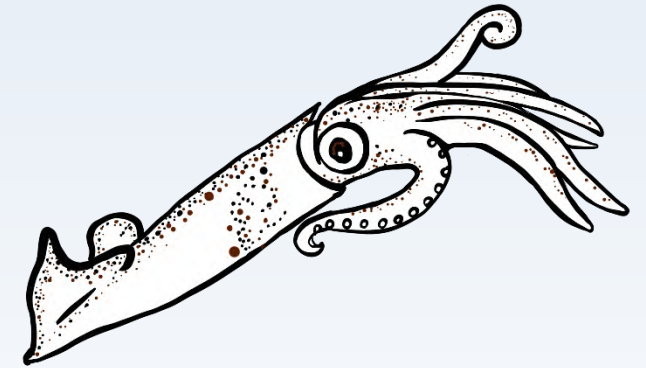
- Section 1 (Chapters 1-5)
 - *Chapter 1* – Introduction
 - Rationale for Market Squid Fishery Management review
 - Added Marine Life Management Act and Enhanced Status Report information
 - *Chapter 2* – Background
 - Updated biological and ecological information
 - *Chapter 3* – Management measures
 - Rationale for extended weekend closure and new gear provisions
 - Ongoing Department monitoring programs, best practices for lighting
 - Removed experimental market squid vessel permits
 - Added proposed Experimental Fishing Permits





FMP Amendment Chapters 4 and 5

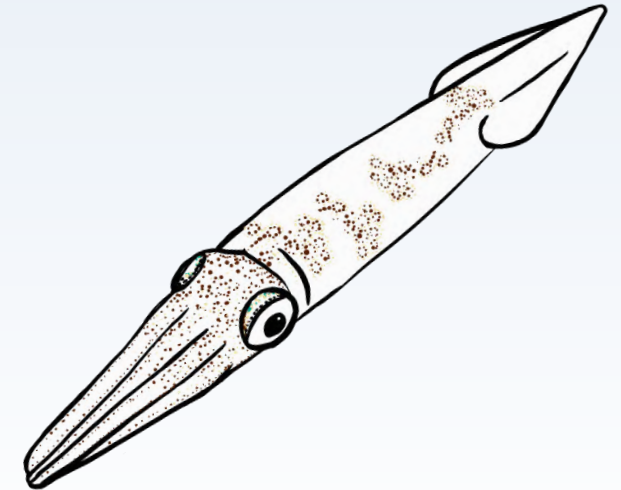
- Section 1 (Chapters 1-5), cont.
 - *Chapter 4 – Research*
 - Updated past and ongoing monitoring information
 - Transition to electronic logs
 - Updated current knowledge of essential fishery information
 - Empirical dynamical modeling
 - *Chapter 5 – Future management needs and management costs*
 - Added future management needs and potential changes
 - Updated estimated annual management costs





FMP Amendment Other Sections

- Section 2 - Original environmental analysis
 - Not included in FMP amendment
 - Remains unchanged in original FMP
- Section 3 - Original regulatory text
 - Not included in FMP amendment
 - Regulations found in Title 14
- Section 4 - Public Comment
 - Original response remain in original FMP
 - New section 2 in Amendment 1 with new public comment and responses





FMP Amendment - Management Components

- Changes to Fishery Control Rule and Environmental Considerations
 - Statewide weekend closure extension; Monterey Bay area extension
 - Rib line and rope purse line requirement
- No changes to Restricted Access Program and Administrative Items



Summary – Department Recommendations

- Extend weekend closure
 - Statewide to begin at 7am on Friday
 - Monterey Bay Area to Sunday midnight
 - Require rib line and rope purse line
 - Fishery closure notification change
 - Squid lighting clarity
-
- First Amendment to Market Squid FMP





Amendment and Regulations Timeline

Proposed Timeline:

**FGC Meeting
April 16-17, 2025**

**FGC Meeting
June 18-19, 2025**

**FGC Meeting
August 13-14, 2025**

- Notice Hearing
 - Request regulatory notice and FMP Amendment process
- Discussion Hearing
- Adoption Hearing

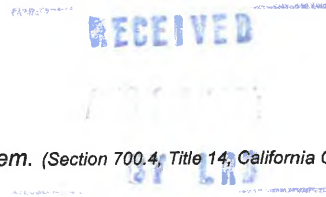
Thank You



For questions please contact:
SFAC@wildlife.ca.gov



State of California – Department of Fish and Wildlife
2024 RESTRICTED SPECIES PERMIT AMENDMENT REQUEST
DFW 1313b (REV. 10/23/2023) Page 1 of 2



IMPORTANT! YOU MAY NOT OBTAIN ANIMALS PRIOR TO AMENDMENT APPROVAL

Fees include a nonrefundable three percent (3%) application fee, not to exceed \$7.50 per item. (Section 700.4, Title 14, California Code of Regulations CCR).
FEE: \$77.25 (Nonrefundable application fee must accompany this amendment request.)

SEE INSTRUCTIONS ON PAGE 2. TYPE OR PRINT CLEARLY.

FIRST NAME Marisela	M.I. J	LAST NAME Diaz	PERMIT NUMBER 1729
BUSINESS NAME University of California, San Diego			DAY TELEPHONE 858-534-4263

LOCATION OF ANIMAL(S) HOUSING: Note: Animals being held at multiple locations require inspection certification by the Department that each of those facilities meet the minimum applicable housing requirements as set forth in subsection 671.1(a)(8)(A-F), Sections 671.3-671.4 and/or 671.7(b), Title 14, of the CCR.

ADDRESS 9500 Gilman Drive	CITY La Jolla	STATE CA	ZIP CODE 92093	COUNTY San Diego
ADDRESS	CITY	STATE	ZIP CODE	COUNTY

List all restricted animals **TO BE ACQUIRED** in the following order: mammals, birds, fish, or reptiles. Group animals by order, family, and species. Use the following letters to denote sex: M=Male, F=Female, and U=Neutered or Unknown. Mark an "X" in the **TO BE ACQUIRED** column for animals to be acquired within the next year. **Unique Identifiers:** Use the following letters to denote unique identifying methods (See Section 671.1(c)(3)(J), Title 14, of the CCR): M=Microchip, T=Tattoo, and A=Alternative Method. Aquaculture and fish permittees: Identify the actual number in the ID number field and identify either W=Weight, V=Volume or C=Count in the method field. Remember to complete the Importation Only Section below for animals being imported into California. For California Residents Only: **All native species obtained from a licensed California Wildlife Rehabilitation Facility require a Native Species Exhibiting Permit.** Contact the License and Revenue Branch at (916) 928-5846 or SPU@wildlife.ca.gov if you need additional information.

COMMON NAME	SCIENTIFIC NAME	ID NUMBER	METHOD	SEX	AGE
Jerboa, Lesser Egyptian	Jaculus Jaculus	1	A	U	All
Spiny Mouse	Acomys cahirinus	1	A	U	All
Painted Urchin	Lytechinus pictus	1000	C	U	All
Sea Squirt	Ciona intestinalis	200	C	U	All

WILL ANIMALS BE IMPORTED INTO CALIFORNIA? ☒ YES, COMPLETE IMPORTATION SECTION ☒ NO, EXPLAIN:

Jerboas, painted urchins, sea squirts to be generated from existing in-house colonies.

Spiny mice will be received from a peer academic institution

IMPORT ONLY: COMPLETE THIS SECTION IF YOU ARE IMPORTING ANIMALS INTO CALIFORNIA

LIST SPECIES TO BE IMPORTED Spiny mouse	NUMBER OF ANIMALS 1	ORIGIN (State or Country) Connecticut
PERSON/BUSINESS SHIPPING ANIMALS Yale University, Animal Care		DAY TELEPHONE
ADDRESS 300 Cedar St, PO Box #208003	CITY New Haven	STATE CT
NAME OF CARRIER To be determined.		ZIP CODE 06520
POINT OF ENTRY INTO CALIFORNIA To be determined.		

I certify under penalty of perjury under the laws and regulations of the State of California that all information on this application is true and correct and I am not violating any city or county laws. I agree to comply with the provisions of Section 671, Title 14, of the CCR. I understand it is unlawful to use or possess a permit which was obtained by fraud or deceit (Fish and Game Code Section 1052b). I understand that in the event that this information is found to be untrue or incorrect, the permit will be considered invalid and must be surrendered where purchased and I will be subject to criminal prosecution. I further understand that failure to comply with the terms and conditions of a permit may result in revocation of current permit and/or denial of future permits. Violation of this section is a misdemeanor, punishable by fine of not more than \$1,000.00, imprisonment in the county jail for not more than six months, or both the fine and the imprisonment. In addition, I may be subject to civil penalties under Fish and Game Code Section 2125.

APPLICANT X	DATE 8/14/24
FOR DE REVIEW	ONLY TRANSACTION#
ISSUED BY/DATE	



INSTRUCTIONS FOR COMPLETING THE RESTRICTED SPECIES PERMIT AMENDMENT REQUEST

Use this form to: 1) add species you are not currently authorized to possess; 2) increase the number of animals where there are condition limitations; or 3) add/change facility locations.

Please allow 45 business days for processing your request. Amendments for transgenic species must go before the Fish and Game Commission, so you must allow an additional 30 business days. Incomplete requests will be returned and could delay the issuance of your amendment. Contact the Department of Fish and Wildlife (Department), License and Revenue Branch at (916) 928-5846 or SPU@wildlife.ca.gov if you need additional information regarding Restricted Species Permits.

To complete this application, you must:

1. It is mandatory to complete all items unless exempted.
2. Sign and date the amendment request in ink (an original signature is required).
3. Provide a list of animals to be acquired.
4. Provide a statement of purpose describing in detail the planned use for each animal. Applicants shall include relevant materials, as appropriate, including any lists of prospective clients with their contact information or contracts with clients or websites, scripts, brochures or flyers promoting or describing the planned use of the animals. If the animals will be used in an educational program, the applicant shall provide an explanation why live restricted species are necessary and samples of the educational material and message that will be distributed (not required for animal care, AZA, breeding, research and single event breeding permittees).
5. Provide a resume that provides dates and details documenting you or your full-time employee's qualifying experience caring for restricted animals at a facility engaged in a similar or directly related activity to the permit requested and for the animal(s) to be acquired. This experience shall have been acquired within the previous five years and include a total of at least one year full-time, hands-on experience caring for a species in the same family or closely related taxonomic family as the species requested (required for breeding, exhibiting, nuisance bird abatement, shelter and single event breeding permittees only).
6. Provide a letter of recommendation, written within the previous five years on **letterhead stationery, with an original signature**, from the facility where you or your full-time employee gained the experience. Document the quality and extent of the knowledge and experience, as related to the species and permit requested (required for breeding, exhibiting, nuisance bird abatement, shelter and single event breeding permittees only).
7. Provide an updated copy of your Emergency Action Plan that includes the new species.
8. Provide an updated Breeding Plan that includes the new species (required for breeding and single event breeding permittees only).
9. Provide photograph(s) of the enclosure(s) for animal(s) to be acquired that includes all required elements of the minimum standards as specified in Section 671.3.
10. Provide any other supporting documentation required by regulations.
11. Mail the completed application and supporting documentation with a cashier's check, money order, personal or business check*, or credit card** authorization form with the appropriate fee to the Department of Fish and Wildlife, License and Revenue Branch, PO Box 944209, Sacramento, CA 94244-2090 or apply in person. **DO NOT SEND CASH.**

IMPORTANT INFORMATION FROM THE DEPARTMENT OF PUBLIC HEALTH

The Department of Public Health (CDPH) has regulatory authority over the importation of specified carnivores (including skunks and raccoons), nonhuman primates and bats, due to potential health hazards.

Section 2606.8, Title 17, of the CCR, prohibits the importation of skunks because the hazard to the public from exposure to rabies is extremely high. The CDPH is concerned that certain wild animals could carry rabies and introduce new strains of rabies into the state of California. Therefore, the Department routinely denies requests for the importation and possession of skunks and raccoons. Exceptions may rarely be made for zoological or research institutions demonstrating an extraordinary need. The importation of other specified carnivores, bats or nonhuman primates may be allowed under a CDPH permit in certain circumstances. **For more information on CDPH permits, please contact them at (916) 552-9740.**

NOTICE

Disclosure Statement—Under Section 671.1, Title 14, of the CCR, the Department of Fish and Wildlife is authorized to collect information from applicants to maintain a record of licensure. All information requested on this application is mandatory unless otherwise indicated. All information except the street address and telephone number of the applicant may be provided to the public, if requested. All information related to a business may be released, including the residence address if it is the same as the business address. Other personal information submitted on this application may be released for law enforcement purposes, pursuant to court order, or for official natural resources management purposes.

A licensee may obtain a copy of his/her license records maintained by the Department by submitting a written request to the Custodian of Records, at the Department of Fish and Wildlife, License and Revenue Branch, PO Box 944209, Sacramento, CA 94244-2090. All requests must include the requester's name, address, and telephone number.

PAYMENT POLICY

***Personal or business checks** will be accepted by the Department if name and address are imprinted on the check. Checks returned to the Department due to insufficient funds will render your permit invalid. The Department may also deny the issuance or renewal of any permit if a person has failed to reimburse the Department for the amount due. Any activity performed without a valid permit is a violation of the Fish and Game Code and therefore subject to enforcement action.

****Credit Cards**—Licenses, permits, tags, stamps, or registrations may be purchased with a Visa or MasterCard.

RECEIVED

AUG 23 2024

BY LRB

Statement of Purpose

Species	Purpose
Jerboa, Lesser Egyptian	These animals will be used to study the molecular mechanisms of limb evolution.
Spiny Mouse	Animals will be used to study wound healing properties as it relates to cardiomyocyte proliferation following cardiac injury,
Transgenic Painted Sea Urchin	These animals will be used to study drug metabolism in the embryo, and generating transgenic resources for sea urchin developmental biology.
Transgenic Sea Squirt	Animals will be used to understand how the genome encodes development and the types of changes within the non-coding genome that contribute to disease.

RECEIVED

AUG 23 2024

BY LRS

UCSD Emergency Action Plan for Detrimental Species

(Pursuant to Section 671.1 (c)(3)(I), Title 14 of the CCR) Revision date: August 13, 2024

RECEIVED
AUG 23 2024
BY LRB

Subsection	Requirement	Fulfillment
a.	Re-capture equipment available	Nets for rodents, fish, amphibians, and aquatic invertebrates. Traps for rodents.
b.	Description of human lethal dispatch methods for various animals and a list of qualified personnel who are trained to carry out the methods	<p>Fish, amphibians: Immersion in tricaine methane sulfonate (MS-222) or injection with approved barbiturate euthanasia agent.</p> <p>Aquatic invertebrates: Immersion in tricaine methane sulfonate (MS-222), injection with approved barbiturate euthanasia agent, or exposure to cold/freezing temperatures.</p> <p>Rodents: Injection with approved barbiturate euthanasia agent or inhalation of CO2 gas.</p> <p>List of qualified personnel: Trained UCSD animal technicians, supervisors, veterinarians, and research staff.</p>
c.	List of medical supplies/first aid kits and where they are located	EMERGENCY MEDICAL SUPPLIES and kits containing MEDICAL SUPPLIES in animal facilities and labs.
d.	Description of mobile transport cages and equipment on hand	Tanks, cages, and crates of varied and appropriate sizes.
e.	List of emergency telephone numbers that includes the local department regional office, 911, and animal control agencies	<p>UCSD Security: (858) 534-4357</p> <p>San Diego Police Department: 858-552-1700 or 911</p> <p>CA Dept. Fish & Wildlife Dispatch: 951-443-2944</p> <p>CA Dept. Fish & Wildlife South Coast Region: 858-467-4201</p> <p>County of San Diego Animal Control 619-236-2341</p>
f.	Written plan of action for emergencies	<p><u>As an AALAC accredited institution, UCSD has an extensive campus-wide emergency action plan. Below are three specific aspects of it, as it relates to detrimental animal species.</u></p> <p><u>Evacuation plan:</u> In case of an emergency that would necessitate evacuation, established written guidelines would be followed that include treatment of injured persons, routes of escape, containment of all animals, coordination with on and off campus response agencies, and accounting for all staff members.</p> <p><u>Animal attack:</u> In case of animal attack, personnel would contain and control the animal, ensuring that it is in an appropriate enclosure for the particular species, administer first aid to the victim, call on or off campus medical personnel if necessary for assistance, call the Campus Veterinarian or on-call veterinarian for assistance if needed, and report the incident to the appropriate personnel.</p> <p><u>Animal escape:</u> If an animal escape occurred, UCSD Animal Care Program</p>

personnel would recapture the animal using the appropriate equipment for the species involved and report the escape to the proper on and off campus authorities.

This information applies to all species listed on permit #1729 for the University of California, San Diego:

Species	Location
<i>Xenopus laevis</i>	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
<i>Xenopus tropicalis</i>	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Jerboa, Egyptian	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Spiny mouse	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Salamander, Mexican	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Zebrafish	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Painted Sea Urchin	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093
Transgenic Sea Squirt	UCSD Campus 9500 Gilman Drive, La Jolla CA 92093

RECEIVED

AUG 23 2024

BY LRB

Housing of Spiny Mice

Procedures:

1. Spiny mice will be housed in standard laboratory ventilated mouse or rat cages within a controlled-access vivarium.
2. Examples of cages and racks include:



a.



b.

RECEIVED
AUG 23 2024
BY LRB



Expiration Date: September 15, 2023

United States Department of Agriculture

**Marketing and
Regulatory
Programs**

This is to certify that
UNIVERSITY OF CALIFORNIA-SAN DIEGO

**Animal and
Plant Health
Inspection
Service**

is a registered Class R - Research Facility under the

Animal Welfare Act (7 U.S.C. 2131 et seq.)

Animal Care

Certificate No. 93-R-0437

Customer No. 9196

RECEIVED

AUG 23 2024

BY LRB


Deputy Administrator

From: Krueger, Lauren <lkrueger@UCSD.EDU>
Sent: Monday, September 23, 2024 12:33 PM
To: Hayes, Alyssa@Wildlife
Cc: Yang, Xao
Subject: Re: 2024 Restricted Species Amendment - UC San Diego
Attachments: MOU_Amendment_LDK_Sep24_signed.pdf; UCSD OLAW Approval.pdf; 1 AAALAC Verification letter - # 000503.pdf

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Hello Alyssa,

Thank you again for your time and support with this amendment.

Please find my responses to your questions below in red:

1. Inventory/TBA.

- a. On your amendment you listed the following animals as additions to your permit:
 - i. Lesser Egyptian jerboa (*Jaculus jaculus*) – this species is already approved on your permit.
 - 1. This species does not appear in print on our 2024-2025 permit.
 - ii. Spiny mouse (*Acomys cahirinus*)
 - 1. Yes - this is correct.
 - iii. Painted urchin (*Lytechinus pictus*) – is this animal transgenic? This species is not restricted unless it is transgenic.
 - 1. Yes - this animal is transgenic.
 - iv. Sea squirt (*Ciona intestinalis*) – is this animal transgenic? This species is not restricted unless it is transgenic.
 - 1. Yes - this animal is transgenic.

2. USDA license.

- a. The USDA license that was provided with the amendment has since expired (9/15/2023). Do you have an updated USDA license?
 - i. The requirement to update a research facility's registration every 3 years has been eliminated (<https://www.aphis.usda.gov/animal-care/awa-services/faqs-awa-research-facility-registration-updates-reviews-reports>).

3. Self-inspection report (MOU).

- a. As an MOU facility, UC San Diego is permitted to conduct its own inspections by an accredited USDA veterinarian. These self-inspection reports are required per your original MOU agreement. Please see below:

INSPECTION REQUIREMENTS

1. The ELE shall inspect research facilities as defined by CCR, Title 14, Section 671.1, subdivision (b)(9), once per year. If non-compliance is found, additional inspections shall follow to establish subsequent full compliance. If compliance is not accomplished within 45 days of initial inspection the ELE must notify the Department.
 2. The ELE shall send an annual report describing the findings of the inspection. The report shall include:
 - a. The name of the facility inspected;
 - b. An inventory of what animals were inspected;
 - c. The date(s) of inspection;
 - d. What caging requirements (i.e. current version of the *Guide for the Care and Use of Laboratory Animals*) were used to inspect the facility;
 - e. Proof of the facility's Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) accreditation status;
 - f. If the facility was in compliance with the standards set forth in CCR, Title 14, sections 671.2, 671.3(e), 671.4, and 671.7 if applicable;
 - g. The name and signature of the ELE (or its representative if the ELE is a Research Entity), date, and the USDA Accreditation Number;
 - h. If violations are found, a detailed description of the violations including citations describing the specific sections violated; and
 - i. If violations are found, a current status of the violation (if proper changes have occurred to bring the research facility back into compliance).
 3. The report shall be sent to the Department with the annual permit renewal.
 4. This MOU will be valid for 5 years with annual renewal and the annual ELE/MOU renewal fee paid.
- Please submit an updated inspection report with the above criteria fully reflected in your current report.
 - Please find attached an updated inspection report as well as our AAALAC accreditation letter.
4. **Proof of federal program.**
- a. It is required for every research permittee to submit proof of inclusion in a federal program pursuant to [California Code of Regulations \(CCR\), Title 14, Section 671.1 \(c\)\(3\)\(L\)](#).
- Please submit paperwork that support your facility is part of a federal program as highlighted above.
 - Please find attached our OLAW assurance.

Please let me know if I can provide you with any additional information.

Thank you again for your time and have a nice day!

Kind regards,

Lauren

Lauren Krueger, BVM&S AFHEA MRCVS DACLAM
Associate Director
Animal Care Program
University of California, San Diego
Office: (858) 822-4580

Email: lkrueger@ucsd.edu

From: Hayes, Alyssa@Wildlife <Alyssa.Hayes@Wildlife.ca.gov>
Sent: Tuesday, September 10, 2024 12:29 PM
To: Krueger, Lauren <lkrueger@UCSD.EDU>
Cc: Yang, Xao@Wildlife <Xao.Yang@wildlife.ca.gov>
Subject: 2024 Restricted Species Amendment - UC San Diego

Good morning Lauren,

California Department of Fish and Wildlife received your 2024 restricted species amendment for UC San Diego.

I had a few questions that I'd like to clear up before I can resume the reviewal process.

1. Inventory/TBA.

1. On your amendment you listed the following animals as additions to your permit:
 - i. Lesser Egyptian jerboa (*Jaculus jaculus*) – this species is already approved on your permit.
 - ii. Spiny mouse (*Acomys cahirinus*)
 - iii. Painted urchin (*Lytechinus pictus*) – is this animal transgenic? This species is not restricted unless it is transgenic.
 - iv. Sea squirt (*Ciona intestinalis*) – is this animal transgenic? This species is not restricted unless it is transgenic.

2. USDA license.

1. The USDA license that was provided with the amendment has since expired (9/15/2023). Do you have an updated USDA license?

3. Self-inspection report (MOU).

1. As an MOU facility, UC San Diego is permitted to conduct its own inspections by an accredited USDA veterinarian. These self-inspection reports are required per your original MOU agreement. Please see below:

INSPECTION REQUIREMENTS

1. The ELE shall inspect research facilities as defined by CCR, Title 14, Section 671.1, subdivision (b)(9), once per year. If non-compliance is found, additional inspections shall follow to establish subsequent full compliance. If compliance is not accomplished within 45 days of initial inspection the ELE must notify the Department.
 2. The ELE shall send an annual report describing the findings of the inspection. The report shall include:
 - a. The name of the facility inspected;
 - b. An inventory of what animals were inspected;
 - c. The date(s) of inspection;
 - d. What caging requirements (i.e. current version of the *Guide for the Care and Use of Laboratory Animals*) were used to inspect the facility;
 - e. Proof of the facility's Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) accreditation status;
 - f. If the facility was in compliance with the standards set forth in CCR, Title 14, sections 671.2, 671.3(e), 671.4, and 671.7 if applicable;
 - g. The name and signature of the ELE (or its representative if the ELE is a Research Entity), date, and the USDA Accreditation Number;
 - h. If violations are found, a detailed description of the violations including citations describing the specific sections violated; and
 - i. If violations are found, a current status of the violation (if proper changes have occurred to bring the research facility back into compliance).
 3. The report shall be sent to the Department with the annual permit renewal.
 4. This MOU will be valid for 5 years with annual renewal and the annual ELE/MOU renewal fee paid.
- Please submit an updated inspection report with the above criteria fully reflected in your current report.
4. **Proof of federal program.**
1. It is required for every research permittee to submit proof of inclusion in a federal program pursuant to [California Code of Regulations \(CCR\), Title 14, Section 671.1 \(c\)\(3\)\(L\)](#).
- Please submit paperwork that support your facility is part of a federal program as highlighted above.
-

Please address the information above so that we may proceed with the amendment process.

Please let me know if you have any questions or concerns with the requests above.

Thank you,

Alyssa Hayes
Restricted Species, Special Permit Unit
License and Revenue Branch



March 27, 2023

Kristen Anderson-Vicino, M.S.
Director
IACUC Office
University of California - San Diego
9500 Gilman Drive
Mail Code 0071
La Jolla, CA 92093-0071

Dear Ms. Anderson-Vicino:

AAALAC International is pleased to convey that the University of California, San Diego, University of California, La Jolla, California is accredited. Our records show that the University of California, San Diego, University of California initially achieved AAALAC International accreditation on February 19, 1980.

This interest, contribution and participation in the AAALAC International accreditation program is valued and appreciated. As you are aware, AAALAC International conducts site visits to institutions and requires being apprised of significant programmatic changes during the interim between these site visits. Should you desire additional information or wish to comment on any aspect of the accreditation process, please contact our office.

Sincerely,

A rectangular area where the signature of Gary L. Borkowski has been redacted with a solid grey box.

Gary L. Borkowski, D.V.M., M.S.
Global Director

GLB:jl
000503



UCSD ANIMAL CARE PROGRAM
VETERINARY SERVICES

9500 GILMAN DRIVE, DEPT 0614
LA JOLLA, CALIFORNIA 92093-0614

To whom it may concern:

I certify that the animals listed on the detrimental species permit inventory and their housing have been inspected at least twice during the year, at six month intervals, and that the animals are being cared for and housed in accordance with the applicable requirements in subsections 671.1(a)(8)(A)-(F), and sections 671.2 through 671.4, Title 14 of the CCR to satisfy the inspection requirement of amending the permit.

The most recent inspection dates:

- Axolotls: 18Jul24
- Lesser Egyptian Jerboas: 02Jul24, 15Aug24
- Xenopus spp: 02Jul24
- Zebrafish: 02Jul24, 18Jul24, 14Aug24

Veterinarian's signature: _____

Veterinarian's printed name: Lauren Krueger

USDA Accreditation #: 084562

Date: 20Sep24



FOR US POSTAL SERVICE DELIVERY:

Office of Laboratory Animal Welfare
Division of Assurances
6700B Rockledge Drive
Suite 2500, MSC 6910
Bethesda, Maryland 20892-6910
Home Page: <https://olaw.nih.gov>

FOR EXPRESS MAIL:

Office of Laboratory Animal Welfare
Division of Assurances
6700B Rockledge Drive, Suite 2500
Bethesda, Maryland 20817
Telephone: (301) 496-7163

08/04/2021

Re: Approval for D16-00020 (A3033-01)

Sandra A Brown, Ph.D.
Vice Chancellor for Research
University Of California - San Diego
9500 Gilman Drive #0043
La Jolla, CA 92093-0043

Dear Dr. Brown:

I am pleased to inform you that the Office of Laboratory Animal Welfare (OLAW) reviewed and approved your institution's Animal Welfare Assurance (Assurance) that was submitted in accordance with the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals (Policy), revised 2015.

Your Assurance, identification number D16-00020 (A3033-01), became effective on 08/04/2021 and will expire on 06/30/2025. Please include the Assurance number on all correspondence to OLAW. A copy of the signed Assurance document will be sent in a separate email. The signature page provides verification of approval by OLAW and includes the period during which your institution's Assurance is effective.

The Assurance is a key document that sets forth the responsibilities and procedures of your Institution regarding the care and use of laboratory animals according to the PHS Policy. The practices described in the Assurance document must be followed by all individuals in the animal care and use program.

Please note that the OLAW Annual Reporting period is the federal fiscal year, October 1 through September 30. The Annual Report to OLAW is due by December 1 (but no earlier than September 30).

If I may be of any further assistance, please do not hesitate to contact me.

Sincerely,

Animal Welfare Program Specialist, OLAW
National Institutes of Health

cc: IACUC Contact

Memorandum

Date: January 28, 2025

Original signed copy on file;
Received 1/31/25

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **Item for Receipt at the February 12-13, 2025 Meeting: Approval of Restricted Species Permit Application to Possess Transgenic Invertebrate Species**

The University of California San Diego (UCSD) has applied for a Restricted Species Permit to possess transgenic painted urchins (*Lytechinus pictus*) and transgenic sea squirts (*Ciona intestinalis*). According to the California Code of Regulations (CCR), Title 14, Section 671.1(a)(8)(H), all approved applications to possess a transgenic aquatic animal shall be reviewed by the California Fish and Game Commission (Commission) at a regularly scheduled meeting. The Commission may deny the issuance of a permit if it determines that the applicant is unable to meet the regulatory requirements for the importation, transportation, possession, and confinement of transgenic aquatic animals.

The transgenic urchins and sea squirts will be used for biological research. UCSD has agreed to comply with containment and security conditions as specified in CCR, Title 14. California Department of Fish and Wildlife (Department) Marine Region staff have coordinated with the Department's Shellfish Health Lab in reviewing the permit. The Department recommends issuing UCSD a Restricted Species Permit to possess transgenic painted urchins and transgenic sea squirts.

If you have any questions or need additional information on this matter, please contact Dr. Craig Shuman, Marine Regional Manager at R7RegionalMgr@wildlife.ca.gov.

Attachment

ec: **Department of Fish and Wildlife**

Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Craig Shuman D. Env., Regional Manager
Marine Region

Kirsten Ramey, Program Manager
Marine Region

Adam Frimodig, Senior Environmental Scientist
Marine Region

Sara Briley, Environmental Scientist
Marine Region

Colleen Burge, Ph.D., Shellfish Pathologist and
Research Scientist Supervisor
Fisheries Branch

Commissioners
Erika Zavaleta, President
Santa Cruz

Samantha Murray, Vice President
La Jolla

Jacque Hostler-Carmesin, Member
McKinleyville

Eric Sklar, Member
Saint Helena

Darius W. Anderson, Member
Kenwood

STATE OF CALIFORNIA
Gavin Newsom, Governor

Fish and Game Commission



*Wildlife Heritage and Conservation
Since 1870*

Melissa A. Miller-Henson
Executive Director
P.O. Box 944209
Sacramento, CA 94244-2090
(916) 653-4899
fgc@fgc.ca.gov
www.fgc.ca.gov

April 11, 2025

Keith Jenne, DVM
Executive Director, Animal Care Program
Campus Veterinarian
University of California, San Diego
9500 Gilman Drive
La Jolla, CA

Sent via email to kjenne@UCSD.edu

Dear Dr. Jenne:

I write to you today on behalf of the California Fish and Game Commission regarding an unfortunate situation the Commission became aware of earlier this year that involves a non-native, transgenic aquatic species. The Commission supports the important research work of California's universities, while also underscoring the importance of complying with regulations governing the importation, possession, transportation and rearing of, or research on, restricted species.

In the fall of 2024, Cedars-Sinai Medical Center submitted to the California Department of Fish and Wildlife (Department) a restricted species permit application for the use of transgenic zebrafish for research purposes. Through that application, the Commission became aware of several instances where transgenic zebrafish were relocated from the University of California San Diego (UCSD) to Cedars-Sinai Medical Center before the center had received its permit to possess restricted species.

The Cedars-Sinai application states that, on September 3, 2024, wild-type embryos were transported by car from UCSD in La Jolla to Cedars-Sinai in Los Angeles to begin establishing a zebrafish colony; transgenic zebrafish were then transported from UCSD to Cedars-Sinai between September 20 and October 10, 2024. Cedars-Sinai notified the Department of the movements on October 11, 2024. As of November 1, 2024 there were approximately 25 tanks containing just over 700 fish at the Cedars-Sinai zebrafish facility, where the fish continued to receive care at levels applied at the UCSD facilities, though no research was allowed to take place until a valid permit was issued.

The movement of live transgenic aquatic animals from a facility is prohibited by subsection (a)(8)(C) of Section 671.1, Title 14, California Code of Regulations, unless specifically

authorized by the Department. When working with restricted species, permit compliance and diligence in the confinement, biosecurity, and transportation of transgenic species is critical to ensure that California's native species and habitats are not impacted. Little is known about the risk zebrafish pose specifically to California's environment; however, recent research suggests that zebrafish are able to survive and reproduce in a broader range of aquatic habitats than previously understood. Were they to escape into California waters, especially in southern California, zebrafish may prove invasive. Zebrafish have, on at least one occasion, established a foothold in California. Great care must be taken to protect California's ecosystems already affected by numerous non-native and invasive species.

The Commission values its relationships with research institutions and the scientific community, which help provide much of the scientific information on which the Commission bases its decisions. At the same time, we cannot emphasize enough the importance of ensuring that those who are entrusted with the privilege of working with restricted species fully understand and are willing, and able, to abide by the governing regulations and your safety protocols established to protect California's natural resources.

Please feel free to reach out to me if you have any questions or would like to discuss the contents of this letter.

Sincerely,


Melissa Miller-Henson
Executive Director

cc: Kristen C. Anderson-Vicino, Director, Institutional Animal Care and Use Committee Office,
Research Compliance and Integrity
Lauren Krueger, Associate Director, Animal Care Program
California Department of Fish and Wildlife
Nathaniel Arnold, Deputy Director and Chief, Law Enforcement Division
Chad Dibble, Deputy Director, Wildlife and Fisheries Division
Joshua Morgan, Branch Chief, License and Revenue Branch
Craig Shuman, Regional Manager, Marine Region

Staff Summary for February 12-13, 2025

*(For background purposes only)***24. Experimental Fishing Permit (EFP) Major Amendment Request****Today's Item**Information ☐Action ☒

Receive, consider, and potentially act on a major amendment request for an EFP (Commission tracking #2023-02) approved to test pop-up fishing systems in the California Dungeness crab fishery.

Summary of Previous/Future Actions

- | | |
|---|-----------------------------|
| • Approved EFP application #2023-02 | June 14-15, 2023 |
| • Department informed the Commission about an EFP major amendment request | February 6, 2024 |
| • Approved EFP major amendment | April 17-18, 2024 |
| • Department informed the Commission about a second EFP major amendment request | October 22, 2024 |
| • Published notice of EFP major amendment request | October 24, 2024 |
| • Department transmitted recommendation for the request | January 2, 2025 |
| • Published notice of receipt of Department recommendation | January 2, 2025 |
| • Today discuss and consider approving EFP major amendment request | February 12-13, 2025 |

Background

The Commission and Department jointly administer the EFP Program, authorized by the California Fisheries Innovation Act of 2018 (California Fish and Game Code Section 1022) and implemented through Section 91, Title 14. The program fosters innovation in California's marine fisheries by allowing limited, short-term exemptions from state fishing laws to test new management approaches or conduct research. Learn more about the program, at <https://wildlife.ca.gov/Conservation/Marine/EFP> and <https://fgc.ca.gov/EFP>.

Approved EFP Application

At its June 2023 meeting, the Commission approved EFP application #2023-02 from the National Marine Sanctuary Foundation to test on-demand pop-up gear systems in the California Dungeness crab fishery.

EFP holders can request amendments (administrative updates, minor, or major) per subsection 91(k)(2). The Department approves administrative updates and minor amendments. Major amendments (affecting species, location, gear, or participants) require Commission approval and are subject to the same review and approval process as new applications.

Staff Summary for February 12-13, 2025
(For background purposes only)

EFP Major Amendment Request Overview

The EFP holder is requesting a second major amendment within one year (Exhibit 1). The Commission approved the first amendment in April 2024, modifying the season (allowing Dungeness crab retention during RAMP closures), authorized agents and vessels, gear (marking, number of pop-up systems and traps) and location, and adding rock crab.

In October 2024 the Department notified the Commission of the second major amendment request under consideration today; the Department's recommendations (exhibits 2-3) were published January 2.

Today, the Department will present the requested amendments, its recommendations, and rationale for the recommendations (Table 1), and proposed special conditions (Exhibit 3) for Commission consideration.

Table 1: Requested amendments to EFP and Department recommendations

Condition Type	EFP Holder Request	Department Recommendation	Rationale
Authorized Agents and Vessels	Increase from 10 to 40	Supports request	
Traps per Trawl	Increase from 10 to 50 (or as deemed appropriate by Department)	Increase to 20	Longer trawls increase entanglement risk (including groundlines between traps), gear conflict, and ghost fishing risk from lost gear. 20 traps balances testing longer lengths with risk mitigation.
Per-Vessel Trap Limit	Increase from 150 to vessel permit trap tier	Supports request	
Trap Service Interval	Increase from 96 hours (4 days) to 216 hours (9 days)	Increase to 168 hours (7 days), with exemptions for weather or undue hardship (notification required)	Provides flexibility beyond F&G Code Section 9004 for normal commercial activity, and allows agents to use judgement on unsafe weather while maintaining a gear servicing requirement. Regular servicing reduces gear loss and ghost fishing.

Significant Public Comments

The EFP holder indicates that it appreciates the Department's recommendation to increase the number of authorized agents, and asks for the Commission to support its request to ensure equitable fishing opportunities across all EFPs trialing pop-up gear (Exhibit 5).

Staff Summary for February 12-13, 2025

*(For background purposes only)***Recommendation**

Commission staff: Approve the EFP major amendment request with proposed special conditions, as recommended by the Department.

Department: Approve National Marine Sanctuary Foundation's EFP (Commission tracking ID #2023-02) major amendment request with proposed special conditions as specified on form DFW 1103 (Exhibit 3).

Exhibits

1. Major amendment request, transmitted to Commission on October 22, 2024
2. Department recommendation memo, received January 2, 2025
3. Draft form DFW 1103, including standard terms and proposed amended special conditions for major amendment
4. Department presentation
5. Letter from Greg Wells, Gear Innovations Manager, National Marine Sanctuary Foundation and EFP holder, received January 30, 2025

Motion

Moved by _____ and seconded by _____ that the Commission approves the major amendment request for the EFP (Commission tracking ID #2023-02) with special conditions as recommended by the Department.

OR

Moved by _____ and seconded by _____ that the Commission approves the major amendment request for the EFP (Commission tracking ID #2023-02) with special conditions as recommended by the Department, except as follows: _____.

From: Greg Wells <gwells@marinesanctuary.org>

Sent: Thursday, April 3, 2025 04:27 PM

To: FGC <FGC@fgc.ca.gov>

Subject: Experimental Fishing Permit (2023-02) Comments

Dear California Fish and Game Commission,

Please accept the attached comments regarding the National Marine Sanctuary Foundation's EFP major amendment, which will be considered at the April 16-17 meeting.

Thank you,

Greg

Greg Wells

Gear Innovations Manager



[Facebook](#) | [X](#) | [Instagram](#) | [LinkedIn](#)



MarineSanctuary.org



April 3, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th floor
Sacramento, CA 95814

Re: Experimental Fishing Permit (EFP #2023-02) Major Amendment Request

Dear President Zavaleta and Commission members:

Thank you for your consideration of the National Marine Sanctuary Foundation's Experimental Fishing Permit major amendment request in support of pop-up gear testing efforts in the California Dungeness crab fishery.

We appreciate the Commission's approval of the amendment at its February 12-13, 2025 meeting, particularly the provisions allowing increased participation by fishermen and an extension of the trap service interval. These changes will support our continued collaboration with the fishing community and broaden engagement in testing and improving innovative pop-up gear.

We respectfully request that the Commission reconsider its decision regarding gear allowances under our permit. Specifically, we are requesting an increase in both the number of traps permitted per string and the overall trap limit, consistent with our original amendment request. These adjustments are important to help ensure equitable fishing opportunities across all EFPs involved in pop-up gear trials in the Dungeness crab fishery and to enable the success of our project, which is supported by investments from the state to advance the testing and development of multiple gear types from a range of manufacturers.

We understand and acknowledge concerns about the potential for increased entanglement risk with longer trap trawls. To reduce this risk, we are asking participating fishermen to follow a best-practice approach by using non-buoyant groundline between traps to minimize line exposure in the water column and reduce the likelihood of entanglement.

Thank you again for considering this request and for your continued support to advance gear innovation in the California Dungeness crab fishery.

Sincerely,



Greg Wells
Gear Innovations Manager
National Marine Sanctuary Foundation

From: Keith Rootsart <[REDACTED]>

Sent: Thursday, April 3, 2025 03:34 PM

To: FGC <FGC@fgc.ca.gov>

Cc: Ashcraft, Susan@FGC <[REDACTED]>

Subject: FGC Meeting Written Comments

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Dear FGC staff,

Attached are our written comments for the April 17, 2025 meeting Agenda item 27. These comments are hereby submitted prior to the written comment deadline of April 3 at 5:00 PM.

Thank you,

Keith Rootsart

Giant Giant Kelp Restoration

[REDACTED]



Giant Giant Kelp
Restoration Project

Regarding Agenda Item 27 – Commission Policy on Naming Installations.

This agenda item considers changes to a 13 year old policy (Figure 1) to remove the names of historic people from three MPAs. There are three MPAs named after individuals: Lovers Point-Julia Platt State Marine Reserve, Edward F. Ricketts State Marine Conservation Area, and Robert W. Crown State Marine Conservation Area in Central California.

There was a petition ([2022-06](#)) to rename Casino Point State Marine Conservation Area to Dr. Bill Bushing SMCA at Casino Point after Dr. Bill's death December 21, 2021 but this widely supported petition was denied (Figure 2) by the Commission because Dr. Bill had only recently passed and the policy is that he had to have [passed for 5 years](#). In discussing the petition, Commissioners [considered](#) revisiting the many FGC policies and referred this to FGC staff. There was no mention of not allowing naming MPAs after individuals only that we should consider naming sites after indigenous people's historical names of places.

In Steven L. Yaffee's book Beyond Polarization, Susan Ashcraft, then working for the Department, stated that "DFG did not like the use of historic Native American names for MPAs because they differed from geographic labels used by the public" (p324). Nevertheless, two MPAs were labeled with their tribal names in the southern region in 2012 (p346).

In December 2025 divers could petition to name Casino Point after Dr. Bill under current policy, but this new language would preclude that possibility. This is just one of many examples of the anti-diver sentiment aimed at us as we promote diver stewardship of the ocean. Divers are considered by the Department as a "Vigilante Horde" and "Ecoterrorists." Again, the wishes of the diving community are unexpectedly and deliberately opposed. This change in policy ignores public sentiment and creates a policy that nobody has spoken about or advocated for in public and which CDFW advocated against.

To further punish divers, this policy seeks to remove the names of our local heroes. Removing an individual's name from a place is usually done because it was later revealed that the person is not worthy of the honor, like tearing down a statue of Saddam Hussein or Robert E. Lee. People genuinely dislike changing names capriciously to blow with the political winds of the day such as The Gulf of Mexico being renamed as The Gulf of America or renaming the renamed Denali back to Mt. McKinley.

These three MPAs were established and named in 2007 by a gathered constituency during the MLPA Central Coast deliberations. These individuals made an extraordinary, unique, and long-lasting contribution to the conservation, use, and/or enjoyment of California's

living marine resources. Their efforts have a direct connection with the place and their contribution stood the test of time.

Here are the three individuals:

Julia Barlow Platt, born September 14, 1857 was a Harvard educated embryologist, politician and mayor of Pacific Grove. In Dr. Steve Palumbi's book *the Death and Life of Monterey Bay: A story of Revival*, Platt is credited with tearing down a fence to give the public access to the beach at Lovers Cove. Her prescient pioneering set up a marine protected area that was crucial to the recovery of the sea otter.

Edward F. Ricketts, born May 14, 1897, was a marine biologist and strong influencer of John Steinbeck as they journeyed together on the *Western Flyer* to the Sea of Cortez. Ricketts wrote *Between Pacific Tides* (1939) a pioneering study of intertidal ecology. Over 16 species of marine animals are named after Ricketts. His old wooden laboratory with wells for collecting tidepool animals still remains next to the Monterey Bay Aquarium on the shore of the MPA named after him.

Six-time elected State Assemblyman Robert W. Crown, born January 23 1922, campaigned to preserve Alameda Beach (1880) as public parkland. The SMCA that bears his name is very small, only 132 acres along 2.5 miles of shoreline at the former Alameda Naval Air Station, an island now developed for civilian use. It is the only MPA on the island of 75,353 residents. Crown Memorial State Beach, adjacent to the Robert W. Crown State Marine Conservation Area was also named after him in recognition of his work to preserve the area.

This new policy seeks to remove the names of historic and directly connected individuals to follow the political need of including indigenous people in the naming process who were largely excluded from the MLPA initiative. Renaming these places capriciously is lame. Places where the Commissioners reside like San Diego, Santa Cruz, and St. Helena are all named after people. Napa and Arcata are named after indigenous places. Why can't both naming conventions be allowed?

G2KR is proposing a new State Marine Reserve adjacent to the Edward F. Ricketts State Marine Conservation Area and near Lovers Point-Julia Platt State Marine Reserve, that we tentatively call Tanker's Reef State Marine Reserve as a working title. In early Monterey history this was the sandy bottomed location where oil tankers would anchor before onboarding crude oil from Coalinga at the Standard Oil platform, now Wharf #2. But there is an earlier history of Tanker's Reef that we could honor. Establishing this new protected area in Monterey would be a great opportunity for the Ohlone Coastanoan Esselen Nation to name and commemorate the new MPA for recommendation to FGC.

In conclusion, renaming these three MPAs is just a bad idea and will thereby cast aspersions on these three amazing individuals. We should keep the policy and allow the diving community to commemorate Dr. Bill's, or other future environmental heroes', significant contributions to the marine ecology of California.

Keith Rootsart
Giant Giant Kelp Restoration

Figure 1.

Naming Installations Policy with Draft Potential Revisions

Naming Protected Areas Installations Policy

It is the policy of the Fish and Game Commission that:

- I. ~~No fish hatchery, game refuge, wildlife area, ecological reserve, or marine protected area (MPA) or any installation, other than Marine Protected Areas (MPAs), shall be named for any person, living or dead. Installations Protected areas shall be named in a manner which will indicate their geographical location, avoiding as far as possible the names of local political units. Vessels shall be named for fish.~~
- II. Traditional tribal placenames for a geographic location shall be considered in collaboration and collaboration with local tribes when naming or renaming any protected area, including MPAs.
- I. ~~The Commission may commemorate an individual by including that individual's name after the geographic name of an MPA if all of the following criteria are met:~~
 1. ~~The individual has been deceased for a minimum of 5 years;~~
 2. ~~It has been determined the individual has made an extraordinary, unique, and long-lasting contribution to the conservation, use, and/or enjoyment of California's living marine resources;~~
 3. ~~It has been determined with reasonable care and consideration that the individual's merit and/or contribution can stand the test of time;~~
 4. ~~The individual and/or their efforts have a direct connection with the geographic location of the MPA or immediate vicinity.~~
- III. The Commission shall be represented at and may participate in all ceremonies dedicating the launching or inauguration of any wildlife area, ecological reserve, or MPA ~~or any installation of the facilities mentioned above.~~ The Department and the Commission staff shall coordinate their work and efforts in ~~setting up or arranging such dedication ceremonies programs.~~

(Amended 4/7/1994, and 5/23/2012, 2/xx/2024)

Figure 2.

Tracking No.	Date Received	Name of Petitioner	Subject of Request	Short Description	FGC Receipt Scheduled	FGC Action Scheduled
2022-06	3/4/2022	Ken Kurtis	Marine Protected Areas: Casino Point SMCA	Rename Casino Point SMCA to "Dr. Bill Bushing SMCA at Casino Point" to provide permanent recognition of the 55 year legacy of resident marine biologist Dr. Bill, who had a direct connection to the area now named Casino Point SMCA; Dr. Bill passed away in December 2021; June 2022 would mark his 75th birthday.	4/20-21/2022	6/15-16/2022

REFER to FGC staff for review and recommendation.	6/15-16/2022	FGC Staff	DENY due to inconsistency with FGC Naming Installations Policy (https://fgc.ca.gov/About/Policies/Miscellaneous#Installations). The policy dictates, with one exception, that installations shall not be named for any person, living or dead, and shall be named in a manner that will indicate their geographical location, avoiding the names of political units. The exception is marine protected areas (MPAs), where FGC may commemorate an individual by including that individual's name after the geographic name of an MPA if four criteria are met. The petition does not meet the first criteria which requires the individual be deceased for a minimum of five years. Since the first criteria has not been met, staff has not dedicated the time and outreach necessary to assess the additional three criteria.
---	--------------	-----------	---

California Fish and Game Commission

Petitions for Regulation Change — Action (updated April 1, 2025)

CFGC - California Fish and Game Commission CDFW - California Department of Fish and Wildlife WRC - Wildlife Resources Committee MRC - Marine Resources Committee , MR - Marine Region
 Grant: CFGC is willing to consider the petitioned action through a process Deny: Not willing to consider the petitioned action Refer: Need more information before the final decision

Tracking No.	Date Received	Name of Petitioner	Short Description	CFGC Receipt	CFGC Initial Action Date	Initial Staff Recommendation
2025-01	1/16/2025	Cheryl Wilen	Modify language to allow a flexible blade or knife, e.g. "putty knife" for take of limpets	2/12-13/2025	4/16-17/2025	DENY: The proposed method may support harvest effectiveness and also may increase harvest efficiency, raising concerns regarding potential impacts on limpet populations and the sustainability of harvest levels. The increase in number of people harvesting from the intertidal zone, which has continued since the COVID pandemic, coupled with the potential for a more efficient harvesting method, creates a heightened risk of unsustainable take. Currently, there is insufficient data on the population status of harvested limpet species to assess the risk or determine whether the existing daily bag limit of 35 individuals remains appropriate. Given these constraints and the potential for increased harvest pressure, a precautionary approach is warranted.



Tracking Number: (2025-01)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)

Name of primary contact person: Cheryl Wilen

Address: [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: **Authority cited: Sections 200, 205, 219, 265 and 275, Fish and Game Code. Reference: Sections 200, 205, 255, 265, 270 and 275, Fish and Game Code.**

3. Overview (Required) - Summarize the proposed changes to regulations: Replace "hook-and-line" with "flexible blades or knife, e.g. putty knife**". This is requested specifically for limpets.**

4. Rationale (Required) - Describe the problem and the reason for the proposed change: Mollusks Abalone, clams, scallops, mussels, etc. 14 CCR § 29.10. General. (a) Except as otherwise provided in this article, saltwater mollusks, including octopus, may be taken only on hook-and-line or with the hands." be modified to allow the use of flexible blades, e.g. putty knife, to collect limpets.

As you know, there is no way to collect them using a hook and line and collecting by hand is quite dangerous as one must hit them with their hand in a very specific way to get them to disengage with the rocks. One wrong hit and the collector can fall into the ocean or hard onto slippery rocks. Use of flexible knives is safer and less likely to damage the substrate. Keeping the collection limit at 35/day will ensure that the area is not overfished.

SECTION II: Optional Information



5. **Date of Petition: January 15, 2025**

6. **Category of Proposed Change**

☐ Sport Fishing

☐ Commercial Fishing

☐ Hunting

☒ Other, please specify: **California Recreational Ocean Fishing Regulations
General Ocean Invertebrate Fishing Regulations**

7. **The proposal is to:** *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*

☒ Amend Title 14 CCR § 29.10 Section(s) Mollusks Abalone, clams, scallops, mussels, etc. General. (a) Except as otherwise provided in this article, saltwater mollusks, including octopus, may be taken only on hook-and-line or with the hands

☐ Add New Title 14 Section(s): [Click here to enter text.](#)

☐ Repeal Title 14 Section(s): [Click here to enter text.](#)

8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition** [Click here to enter text.](#)

Or ☒ Not applicable.

9. **Effective date:** If applicable, identify the desired effective date of the regulation. If the proposed change requires immediate implementation, explain the nature of the emergency: [Click here to enter text.](#)

10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: [Click here to enter text.](#)

11. **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: None

12. **Forms:** If applicable, list any forms to be created, amended or repealed:

[Click here to enter text.](#)

SECTION 3: FGC Staff Only

Date received: [01/16/2025](#)

FGC staff action:

☒ Accept - complete

☐ Reject - incomplete

☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____



FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition Tracking Number
- ☐ Granted for consideration of regulation change

California Fish and Game Commission

Table 1: Amended Marine Protected Area (MPA) Petitions for Regulation Change (Bin 2)

April 10, 2025

Background

In December 2023, the California Fish and Game Commission (Commission) received 20 MPA petitions. Seventeen of the 20 petitions bundled multiple requested MPA changes (both regulatory and non-regulatory) into single documents. In total, the 20 petitions included 86 individual proposed changes. At the February 2024 Commission meeting, Commission and California Department of Fish and Wildlife (CDFW) staff provided a table that itemized the individual proposed changes by petition ([link to February 2024 summary table found here](#)). Each individual request was assigned a unique tracking ID associated with the petition number and summarized into a summary table containing all petitions. The table partitioned discrete unique action requests and categorized them by affected MPA, bioregion, Marine Life Protection Act (MLPA) action category (modify, establish, or abolish), action type (e.g., boundaries, take, classification), proposed action, and the justification as stated by the petitioner. The Commission petition tracking number and the unique action request numbers were combined into one category, titled “Tracking ID.”

Petitions were sorted into two categories, or “bins”: Bin 1 contained petitions identified for immediate evaluation and Bin 2 contained petitions for which additional information was necessary before evaluating. Bin 1 petitions were evaluated by the Department in 2024, and the Commission acted on all Bin 1 petitions in December 2024. During the December meeting, the Commission also offered Bin 2 petitioners an opportunity to submit amendments to their petition by March 14, 2025. These were received at the Commission’s February and April 2025 meetings. This document provides updates to the original February 2024 summary table by integrating amendments submitted by petitioners for Bin 2 petitions.

- **Bin 2 Petitions:** There are 15 MPA petitions that were sorted into the Bin 2 category. The 15 Bin 2 petitions collectively include 69 proposed unique actions; including 50 regulatory requests and 19 non-regulatory requests for changes.
- **Amended Bin 2 Petitions:** In total, seven of the 15 Bin 2 petitions were amended by petitioners. The seven petitions collectively include 39 proposed unique actions; 16 of the 39 proposed unique actions were amended.
- **Table 1 (this document):** Table 1 summarizes all actions in amended petitions and highlights changes to actions proposed in amendments.
- **Table 2 (separate document):** Table 2 provides the current list of Bin 2 petitions, incorporating the amendments as the versions that will be evaluated by CDFW.

Select acronyms: SMCA = state marine conservation area, SMR = state marine reserve, DMR = decadal management review,
SCP = scientific collecting permit

Table 1. Amended Bin 2 MPA Petitions Itemized by Individual Actions

Table 1 summarizes amended Bin 2 MPA petitions by individual actions. Only updated action items have had their tracking ID updated with an “AM1” or “AM2” at the end. Note, there was only one “AM2” assigned (2023-15 AM1 was resubmitted as AM2 to make minor clarifications of language). Alterations from original petitions are marked in red with underline. Deleted language from original petitions are marked with ~~strikethrough~~. Language included in the original petition but not specified in original February 2024 summary table is in black underline.

The table column titled Amendment Justification Stated by the Petitioner provides a summary of information provided by petitioners. For complete information on the petitioner’s justification for the amendments, including outreach, please refer to individual petitions and cover letters (provided as exhibits in Item 28 materials, April 2025 Commission meeting).

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-15MPA_1 <u>AM2</u>	Blake Hermann	Yes	Footprint SMR	South	Modify	Classification/ Take	Reclassify SMR to SMCA to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via four <u>six</u> options. Options include various combinations of methods of take, including: Hook-and-line, spear, surface fishing , harpoon (<u>swordfish only</u>), and deep set buoy gear <u>options to prohibit "bottom-contact gear"</u> (see petition for specific options).	<u>Offer modified take combinations to align with federal essential fish habitat gear restrictions, offer simplified take combinations, and remove gear type disallowed in state waters and account for feasibility guidelines.</u>

Tracking ID (Petition #- unique action- and "AM" if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-15MPA_2 <u>AM2</u>	Blake Hermann	Yes	Gull Island SMR	South	Modify	Classification/ Take	Reclassify SMR to an SMCA (<u>or an inshore SMCA or SMR with an offshore SMCA</u>) to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via four <u>six</u> options. Options include various combinations of methods of take, including: Hook-and-line, spear surface fishing , harpoon (<u>swordfish only</u>), and deep-set buoy-gear <u>options to prohibit "bottom-contact gear"</u> (see petition for specific options).	<u>Offer modified take combinations to align with federal essential fish habitat gear restrictions, offer simplified take combinations, and remove gear type disallowed in state waters, and account for feasibility guidelines.</u>
2023-15MPA_3 <u>AM2</u>	Blake Hermann	Yes	Santa Barbara Island SMR	South	Modify	Classification/ Take	Reclassify SMR to an SMCA (<u>or an inshore SMCA or SMR with an offshore SMCA; modified boundary to be straight line; see page 20</u>) to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via four <u>six</u> options. Options include various combinations of methods of take, including: Hook-and-line, spear surface fishing , harpoon (<u>swordfish only</u>), and deep-set buoy-gear <u>options to prohibit "bottom-contact gear"</u> (see petition for specific options).	<u>Offer modified take combinations to align with federal essential fish habitat gear restrictions, add simplified take combinations, remove gear type disallowed in state waters, and account for feasibility guidelines.</u>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-23MPA_1 <u>AM1</u>	Keith Rootsaert, Giant Giant Kelp Restoration Project (G2KR)	Yes	Edward F. Ricketts SMCA	Central	Modify	Classification/ Take	Reclassify SMCA to an SMR to prohibit take <u>Prohibit recreational and commercial take of finfish when a petitioner-proposed “kelp restoration management permit” is active.</u>	<u>Limit fishing restrictions to only when kelp restoration is underway to avoid gear and use conflicts, based on fishermen feedback.</u>
2023- 23MPA_2	Keith Rootsaert, G2KR	No	Edward F. Ricketts SMCA	Central	Modify	Take	Allow unlimited urchin removal	N/A
2023- 23MPA_3	Keith Rootsaert, G2KR	No	Edward F. Ricketts SMCA	Central	Modify	<u>Non- regulatory</u>	Allow out-planting kelp on the reef without an SCP	N/A
2023- 23MPA_4	Keith Rootsaert, G2KR	No	Edward F. Ricketts SMCA	Central	Modify	<u>Non- regulatory</u>	Scientific collecting permit s/restoration: Allow spore dispersal by sporophyte bags without an SCP	N/A
2023- 23MPA_5	Keith Rootsaert, G2KR	No	Edward F. Ricketts SMCA	Central	Modify	<u>Non- regulatory</u>	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	N/A
2023-23MPA_6 <u>AM1</u>	Keith Rootsaert, G2KR	Yes	Pacific Grove Marine Gardens SMCA	Central	Modify	Classification/ Take	Reclassify SMCA to an SMR to prohibit take <u>Prohibit recreational and commercial take of finfish when an petitioner-proposed “kelp restoration management permit” is active.</u>	<u>Limit fishing restrictions to only when kelp restoration is underway to avoid gear and use conflicts, based on fishermen feedback.</u>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023- 23MPA_7	Keith Rootsaert, G2KR	No	Pacific Grove Marine Gardens SMCA	Central	Modify	Take	Allow unlimited urchin removal	N/A
2023- 23MPA_8	Keith Rootsaert, G2KR	No	Pacific Grove Marine Gardens SMCA	Central	Modify	<u>Non- regulatory</u>	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP	N/A
2023- 23MPA_9	Keith Rootsaert, G2KR	No	Pacific Grove Marine Gardens SMCA	Central	Modify	<u>Non- regulatory</u>	Allow out-planting kelp on the reef without an SCP.	N/A
2023- 23MPA_10	Keith Rootsaert, G2KR	No	Pacific Grove Marine Gardens SMCA	Central	Modify	<u>Non- regulatory</u>	Scientific Collecting Permits/Restoration: Allow spore dispersal by sporophyte bags without an SCP.	N/A
2023-23MPA_11 <u>AM1</u>	Keith Rootsaert, G2KR	Yes	Carmel Bay SMCA	Central	Modify	Classification/ Take	Reclassify SMCA to an SMR to prohibit take <u>Prohibit recreational</u> <u>and commercial take of finfish</u> <u>when an petitioner-proposed</u> <u>“kelp restoration management</u> <u>permit” is active.</u>	<u>Limit fishing restrictions</u> <u>to only when kelp</u> <u>restoration is underway</u> <u>to avoid gear and use</u> <u>conflicts, based on</u> <u>fishermen feedback.</u>
2023- 23MPA_12	Keith Rootsaert, G2KR	No	Carmel Bay SMCA	Central	Modify	Take	Allow unlimited urchin removal	N/A

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023- 23MPA_13	Keith Rootsaert, G2KR	No	Carmel Bay SMCA	Central	Modify	<u>Non- regulatory</u>	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	N/A
2023- 23MPA_14	Keith Rootsaert, G2KR	No	Carmel Bay SMCA	Central	Modify	<u>Non- regulatory</u>	Allow out-planting kelp on the reef without an SCP.	N/A
2023- 23MPA_15	Keith Rootsaert, G2KR	No	Carmel Bay SMCA	Central	Modify	<u>Non- regulatory</u>	Scientific collecting permit/restoration: Allow spore dispersal by sporophyte bags without an SCP.	N/A
2023- 23MPA_16	Keith Rootsaert, G2KR	No	Point Lobos SMR	Central	Modify	Classification/ Take	Allow unlimited urchin removal.	N/A
2023- 23MPA_17	Keith Rootsaert, G2KR	No	Point Lobos SMR	Central	Modify	<u>Non- regulatory</u>	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	N/A
2023- 23MPA_18	Keith Rootsaert, G2KR	No	Point Lobos SMR	Central	Modify	<u>Non- regulatory</u>	Allow out-planting kelp on the reef without an SCP.	N/A
2023- 23MPA_19	Keith Rootsaert, G2KR	No	Point Lobos SMR	Central	Modify	<u>Non- regulatory</u>	Scientific collecting permit/restoration: Allow spore dispersal by sporophyte bags without an SCP.	N/A
2023-23MPA_20 <u>AM1</u>	Keith Rootsaert, G2KR	Yes	N/A (New – Tanker’s Reef SMR)	Central	Establis h	Establish new MPA	Establish new Tanker’s Reef SMR near Monterey (685 acres, or 1.07 sq mi) (193 acres, or 0.3 sq miles)	<u>Size reduced to focus on area of active kelp restoration.</u>
2023- 23MPA_21	Keith Rootsaert, G2KR	No	Not specified	Central	N/A	<u>Non- regulatory</u>	Create regulatory pathway to allow placing of artificial reef structures and sunken ship for recreational diving.	N/A

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-23MPA_22	Keith Rootsaert, G2KR	No	Not specified	Central	N/A	Non- regulatory	Allow placement of buoys in restoration areas	N/A
2023-23MPA_23	Keith Rootsaert, G2KR	No	Not specified	Central	N/A	Non- regulatory	Develop a framework to evaluate and approve appropriate restoration and mitigation actions within MPAs and MMAs	N/A
2023-23MPA_24 <u>AM1</u>	Keith Rootsaert, G2KR	Yes	Not specified	Central	N/A	Non- regulatory	Establish a new process in CDFW's Scientific Collecting Permit Program for restoration permits <u>"kelp restoration management permits" as proposed by petitioner</u>	<u>Update title of proposed permit to clarify its intent</u>
2023-23MPA_25	Keith Rootsaert, G2KR	No	N/A	Central	<u>N/A</u>	Non- regulatory	Consider proposed kelp restoration sites as Giant Giant Kelp Restoration-adopted reefs for continued kelp restoration	N/A
<u>2023-23MPA_26</u>	<u>Keith Rootsaert, G2KR</u>	<u>No</u>	<u>Five MPAs</u>	<u>Central</u>	<u>N/A</u>	<u>Non- regulatory</u>	<u>Allow commercial urchin harvest in MPAs for Restoration</u>	N/A
<u>2023-23MPA_27</u>	<u>Keith Rootsaert, G2KR</u>	<u>No</u>	<u>Five MPAs</u>	<u>Central</u>	<u>N/A</u>	<u>Non- regulatory</u>	<u>Exemption for “Wanton Waste Rule”</u>	N/A

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
<u>2023-23MPA- 28 AM1</u>	<u>Keith Rootsaert, G2KR</u>	<u>Yes</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>Non- regulatory</u>	<u>FGC and the Department promote kelp restoration collaboration on their website and in public outreach.</u>	<u>This is prioritized in California MPA Decadal Management Review, Near-term Priorities (ongoing- 2 years), Recommendation 16 to “Conduct more targeted outreach to specific audiences to connect stakeholders with coastal resources and to encourage stewardship and compliance with regulations.”</u>
2023-24MPA_1 <u>—AM1</u>	Mike Beanan, Laguna Bluebelt Coalition	Yes	Laguna Beach no- take SMCA	South	Modify	Boundaries	Extend the Laguna Beach SMCA no-take regulation <u>within the boundaries of the Dana Point SMCA</u> down to the southern border of the City of Laguna Beach, <u>with new southern boundary extending due west (Note: Boundaries of Dana Point SMCA would also need to be adjusted).</u>	<u>Modified boundary to extend west consistent with Laguna Beach City Limits to improve enforcement, and to address concerns expressed by stakeholders at the Orange County MPA Collaborative Meeting on August 22, 2023.</u>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-27MPA_1 <u>AM1</u>	Azsha Hudson, Environment al Defense Center (EDC)	Yes	Anacapa SMCA	South	Modify	Classification/ Take	<p>Reclassify SMCA as an SMR or at a minimum reclassify portion of the SMCA from shore to at least 30 meters depth.</p> <p><u>Amend existing SMCA, evaluating three options (solutions) and choose the one that best protects the eelgrass meadow while allowing for community access:</u></p> <p><u>Option 1: Change SMCA regulations to disallow commercial lobster fishing year round.</u></p> <p><u>Option 2: Change SMCA regulations to disallow hard bottomed fishing gear (including anchoring if applicable) near eelgrass meadows.</u></p> <p><u>Option 3: Extend the existing [Anacapa Island Special Closure] prohibition of deployment of lobster traps less than 20 ft deep to apply out to 30 meters (0-98.43 feet).</u></p>	<p><u>Stakeholder feedback - commercial and recreational fishermen. Protect eel grass meadow while allowing for community access: improve enforcement and compliance.</u></p>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-28MPA_1 <u>AM1</u>	Lisa Suatoni, National Resources Defense Council (NRDC)	Yes	N/A (New – Point Sal SMR <u>SMCA</u>)	South	Establis h	Establish new MPA	Create a new SMR <u>SMCA</u> around Point Sal in central California (14.22 sq mi) and consult with tribes first to determine whether an SMCA with exemptions for cultural and subsistence use is warranted <u>except identify a traditional tribal name for the SMCA through consultation with the Chumash people- and allow recreational take of finfish by hook-and-line from shore.</u>	<u>Amended to a proposed SMCA that allows recreational take of finfish by hook-and-line from shore in recognition of: 1) the importance of this area for federally and non-federally recognized Chumash peoples, and 2) the importance of the area for shore-based subsistence and recreational fishermen.</u>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-29MPA_1 <u>AM1</u>	Lisa Suatoni, NRDC; Sam Cohen, Santa Ynez Band of Chumash Indians (SYBCI); and Azsha Hudson, EDC	Yes	N/A (New – Mishop- shno SMCA)	South	Establis h	Establish new MPA	Establish a new California- Chumash co-management SMCA near Santa Barbara to be named Mishopshno (<u>with modified boundaries in a portion of the original boundaries, modified to reduce size in all dimensions covering 26.2 sq mi 9.05 sq miles</u>) that allows take by members of the Santa Ynez Band of Chumash Indians <u>using hand based equipment</u> for traditional, ceremonial, cultural and subsistence purposes, <u>and allows recreational take of finfish from shore using hook and line.</u>	Amendment: <u>Added goal 3 to honor the nearby historical Mishopshno village and cultural heritage of the Chumash in the area and restore management to the SYBCI of this portion of coastal waters.</u> <u>Proposed take modified to avoid impacting non- commercial take by non- federally recognized Chumash tribal communities</u> <u>Stakeholder feedback - commercial and recreational fishermen.</u>
2023-33MPA_1 <u>AM1</u>	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez- Graudiņš, Azul	Yes	Cabrillo SMR	South	Modify	Boundaries	Expand westward (<u>to 3 mile state line</u>) and northward (<u>to Swordfish Point New Hope Rock</u>) by 15.2 sq mi <u>~9.99 sq mi.</u>	<u>Amendment: Feedback from local stakeholders; adjusted to allow for local commercial lobster fishing north of New Hope Rock.</u>

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-33MPA_2 <u>AM1</u>	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez- Graudiņš, Azul	Yes	Point Dume SMCA	South	Modify	Boundaries/ <u>Take</u>	Expand westward by 4.6 sq mi; <u>add allowance for recreational take from shore by hook and line and by spearfishing.</u>	<u>Amendment:</u> <u>Stakeholder feedback –</u> <u>received requests from</u> <u>recreational fishermen to</u> <u>allow for subsistence</u> <u>fishing.</u>
2023-33MPA_3	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez- Graudiņš, Azul	No	South Point SMR	South	Modify	Boundaries	Expand westward by 26.3 sq mi	N/A
2023-33MPA_4	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez- Graudiņš, Azul	No	Gull Island SMR	South	Modify	Boundaries	Expand northward by 1.8 sq mi	N/A

Tracking ID (Petition #- unique action- and “AM” if amended)	Petitioner	Unique Action Amend- ed	Affected MPA	Bio- Region	MLPA Action Categor y	Action Type	Proposed Action	Amendment Justification Stated by Petitioner/ Summarized by Staff
2023-33MPA_5	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez-Graudiņš, Azul	No	Point Conception SMR	South	Modify	Boundaries	Expand eastward by 14.6 sq mi	N/A
2023-33MPA_6 <u>AM1</u>	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez-Graudiņš, Azul	Yes	Natural Bridges SMR	Central	Modify	Boundaries	Expand southward by 13.7 sq mi and eastward to the edge of Natural Bridges State Beach by ~14.5 sq mi	<u>Amendment: Stakeholder feedback - MPA Collaborative that this modification would clarify and reduce confusion around permitted uses at state beach. (Note: Open to southern boundary options to better balance conservation and fishing interests.)</u>
2023-33MPA_7 <u>AM1</u>	Laura Deehan, Environment CA Research and Policy Center; and Marcela Gutiérrez-Graudiņš, Azul	Yes	N/A (New – Pleasure Point SMCA)	Central	Establish	Establish new MPA	Designate 3.2 square miles as a new SMR <u>SMCA</u> near Pleasure Point (Santa Cruz); <u>allow recreational take from shore by hook and line and spearfishing only.</u>	<u>Amendment: Stakeholder feedback - recreational fishermen.</u>

California Fish and Game Commission
Table 2: Bin 2 Marine Protected Area (MPA) Petitions for Regulation Change, as
Revised by Amended Petitions

April 10, 2025

The California Fish and Game Commission is in the midst of a process to review and consider proposed changes to MPAs and the MPA management program through a petition process, consistent with recommendations from the first decadal management review of California's network of MPAs.

In 2023, the Commission received 20 MPA petitions with 86 individual actions proposed across the 20 petitions. In 2024, after the California Department of Fish and Wildlife completed its evaluation and made recommendations for five of the petitions, referred to as the "bin 1" petitions, the Commission took action; a total of 17 individual actions were addressed with those five petitions.

The remaining 15 petitions are referred to as "bin 2" petitions; they contain a total of 69 proposed individual actions. In December 2024, the Commission offered the bin 2 petitioners an opportunity to submit amendments to their petitions. The following pages contain a table of all the bin 2 petitions with amendments submitted by petitioners integrated into the full list of proposed actions.

The table partitions the petitions into the individual proposed actions and categorizes them by affected MPA, bioregion, Marine Life Protection Act (MLPA) action category (modify, establish, or abolish), action type (e.g., boundaries, take, classification), proposed action, and the justification as stated by the petitioner. The Commission petition tracking number and the unique action request numbers were combined into one category, titled "Tracking ID."

- **Bin 2 Petitions:** There are 15 MPA petitions in the bin 2 category; collectively they contain 69 individual proposed actions; including 50 regulatory requests and 19 non-regulatory requests for changes.
- **Amended Bin 2 Petitions:** Seven of the bin 2 petitions were amended by petitioners; collectively they contain amendments to 16 of the individual proposed actions.
- **Table 1 (*a separate document*):** Only summarizes individual actions in the seven amended petitions, with the amended actions highlighted.
- **Table 2 (*this document*):** Table 2 provides the complete list of bin 2 petitions with amendments incorporated; these are the versions that will be evaluated by the California Department of Fish and Wildlife.

Select acronyms: SMCA = state marine conservation area, SMR = state marine reserve, DMR = decadal management review, SCP = scientific collecting permit

Table 2. All Bin 2 MPA Petitions Itemized by Individual Actions, Updated to Reflect Amended Individual Actions

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-14MPA_1	David Goldenberg, California Sea Urchin Commission (CSUC)	Sea Lion Cove SMCA	North	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_2	David Goldenberg, CSUC	Stewart's Point SMCA	North	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_3	David Goldenberg, CSUC	Salt Point SMCA	North	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-14MPA_4	David Goldenberg, CSUC	Double Cone Rock SMCA	North	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_5	David Goldenberg, CSUC	Naples SMCA	South	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_6	David Goldenberg, CSUC	Anacapa Island SMCA	South	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-14MPA_7	David Goldenberg, CSUC	Point Dume SMCA	South	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_8	David Goldenberg, CSUC	Point Vicente SMCA	South	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.
2023-14MPA_9	David Goldenberg, CSUC	Swami’s SMCA	South	Modify	Take	Allow commercial take of sea urchin	Proposal is consistent with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c, “Explore innovate approaches to engage the fishing industry in MPA research and management”; Commercial urchin fishing can help the recovery and resiliency of kelp ecosystems.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-15MPA_1 _AM2	Blake Hermann	Footprint SMR	South	Modify	Classification /Take	Reclassify SMR to SMCA to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via six options. Options include various combinations of methods of take, including: Hook-and-line, spear, harpoon (swordfish only), and options to prohibit "bottom-contact gear" (see petition for specific options).	This proposal provides an opportunity to fill knowledge gaps by converting no-take MPAs to limited take MPAs; these MPAs weren't originally designed to protect pelagic species or highly migratory species (HMS) as MPAs have minimal protective benefits to HMS; there is an equity imbalance, as a higher proportion of the MPAs within the Channel Islands are no-take SMRs compared to the rest of the state which has a greater percentage of SMCAs; public support from fishery businesses, groups, and individuals; calls to DMR appendix A bullet points: "Allow take of migratory and pelagic species in MPAs that currently do not allow it" and "Return MPA fishing opportunities, especially in legacy fishing areas that were previously open to fishing."

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-15MPA_2 _AM2	Blake Hermann	Gull Island SMR	South	Modify	Classification /Take	Reclassify SMR to an SMCA (or an inshore SMCA or SMR with an offshore SMCA) to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via six options. Options include various combinations of methods of take, including: Hook-and-line, spear, harpoon (swordfish only), and options to prohibit "bottom-contact gear" (see petition for specific options).	This proposal provides an opportunity to fill knowledge gaps by converting no-take MPAs to limited take MPA; these MPAs weren't originally designed to protect pelagic species or HMS as MPAs have minimal protective benefits to HMS; there is an equity imbalance, as a higher proportion of the MPAs within the Channel Islands are no-take SMRs compared to the rest of the state which has a greater percentage of SMCAs; public support from fishery businesses, groups, and individuals; calls to DMR appendix A bullet points: "Allow take of migratory and pelagic species in MPAs that currently do not allow it" and "Return MPA fishing opportunities, especially in legacy fishing areas that were previously open to fishing."

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-15MPA_3 _AM2	Blake Hermann	Santa Barbara Island SMR	South	Modify	Classification /Take	Reclassify SMR to an SMCA (or an inshore SMCA or SMR with an offshore SMCA) to allow either the limited take of highly migratory species (HMS) and possession of coastal pelagic species, or the take of pelagic finfish via six options. Options include various combinations of methods of take, including: Hook-and-line, spear, harpoon (swordfish only), and options to prohibit "bottom-contact gear" (see petition for specific options).	This proposal provides an opportunity to fill knowledge gaps by converting no-take MPAs to limited take MPA; these MPAs weren't originally designed to protect pelagic species or HMS as MPAs have minimal protective benefits to HMS; there is an equity imbalance, as a higher proportion of the MPAs within the Channel Islands are no-take SMRs compared to the rest of the state which has a greater percentage of SMCAs; public support from fishery businesses, groups, and individuals; calls to DMR appendix A bullet points: "Allow take of migratory and pelagic species in MPAs that currently do not allow it" and "Return MPA fishing opportunities, especially in legacy fishing areas that were previously open to fishing."
2023-16MPA_1	Richard Ogg, Bodega Bay Fisherman's Marketing Association	Stewart's Point SMR	North	Modify	Classification /Take	Reclassify SMR to SMCA to allow commercial take of salmon by trolling	Broadening areas where salmon trolling is allowed will improve fishery resiliency as the fishery is currently at risk; aligns with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-16MPA_2	Richard Ogg, Bodega Bay Fisherman's Marketing Association	Bodega Head SMR	North	Modify	Classification /Take	Reclassify SMR to SMCA to allow commercial take of salmon by trolling	Broadening areas where salmon trolling is allowed will improve fishery resiliency as the fishery is currently at risk; aligns with the MLPA master plan for MPAs goals and objectives 1.1, 1.5, 2.4, and 5.1 and the DMR recommendation 6c.
2023-18MPA_1	Greg Helms, Ocean Conservancy	Vandenberg SMR	Central	Modify	Classification /Take	Divide into two MPAs; redesignate a narrow alongshore portion as SMCA and allow recreational shore fishing for finfish by hook and line	Maintain contribution to MLPA Master Plan goals 1- 4 and 6 while addressing equity concerns caused by consumptive activity allowed nearby and within Vandenberg SMR.
2023-18MPA_2	Greg Helms, Ocean Conservancy	Point Conception SMR	South	N/A	Non- regulatory	Continued support of Marine Monitor (M2) radar monitoring	Aligns with the DMR management program of enforcement and compliance; consistent with MLPA Master Plan goal 5.
2023-18MPA_3	Greg Helms, Ocean Conservancy	Kashtayit SMCA	South	Modify	Take	Simplify take regulations to: "Recreational take of finfish, invertebrates (except rock scallops and mussels), and giant kelp by hand harvest is allowed."	Simplifies regulatory language and enhances public understanding without compromising the intent of the MPA.
2023-18MPA_5	Greg Helms, Ocean Conservancy	Campus Point SMCA	South	N/A	Non- regulatory	Change color of no-take SMCA from purple to red on maps	Enhances public understanding.
2023-18MPA_6	Greg Helms, Ocean Conservancy	San Miguel Island Special Closure	South	Abolish	Special closure	Eliminate pinniped special closure MPA	Simplifies regulatory language; consistent with MPA design guidelines.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-18MPA_7	Greg Helms, Ocean Conservancy	Anacapa Island Special Closure	South	Modify	Allowable uses	Revise regulations to allow boat access to Frenchy's Cove	Accounts for regional stakeholder group intent while addressing non-consumptive access concern.
2023-18MPA_8	Greg Helms, Ocean Conservancy	Anacapa Island Special Closure	South	Abolish	Special closure	Reassess and consider removing the full-island special closure	Simplifies regulatory language; consistent with MPA design guidelines.
2023-19MPA_1	Sam Cohen, Santa Ynez Band of Chumash Mission Indians	N/A (New – Chitqawi SMA)	Central	Establish	Establish new MPA	Designate new tribal co-management SMCA with the Santa Ynez Band of Chumash Indians between Morro Bay and Cambria	Reaching 30x30; lack of existing tribal co-management in the area.
2023-20MPA_1	Sam Cohen, Santa Ynez Band of Chumash Mission Indians	Point Buchon SMCA	Central	N/A	Non- regulatory - tribal	Establish co- management with Chumash at Point Buchon SMCA (maybe SMR too)	Point Buchon SMCA may be included in the proposed Chumash Heritage National Marine Sanctuary, so co- management may help that future scenario.
2023-20MPA_2	Sam Cohen, Santa Ynez Band of Chumash Mission Indians	Point Buchon SMR	Central	Modify	Boundaries	Adjust the northern boundary to align with Point Buchon	Extending boundary to the physical Point Buchon will provide geographic marker to fishermen (cited in MPA Collaborative Regulatory Recommendation).
2023-21MPA_1	Rosa Laucci, Tolowa Dee-ni' Nation	Pyramid Point SMCA	North	Modify	Take	Remove take allowance for recreational surf smelt by dip net or Hawaiian type throw net; retain current tribal take exemption	Smelt is culturally important species to the Tolowa Dee-ni' Nation and has declined significantly.
2023-21MPA_2	Rosa Laucci, Tolowa Dee-ni' Nation	Pyramid Point SMCA	North	Modify	Boundaries	Change northern boundary to align with recognized California/Oregon state line	Original boundary used a mapping system that does not align with on-the-ground state line.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-23MPA_1 _AM1	Keith Rootsaert, Giant Giant Kelp Restoration Project (G2KR)	Edward F. Ricketts SMCA	Central	Modify	Take	Prohibit recreational and commercial take of finfish when a petitioner-proposed "kelp restoration management permit" is active.	Protect restored kelp forests; improve diver safety from fishing boat propellers and fishing gear.
2023-23MPA_2	Keith Rootsaert, G2KR	Edward F. Ricketts SMCA	Central	Modify	Take	Allow unlimited urchin removal	Restore kelp forests.
2023-23MPA_3	Keith Rootsaert, G2KR	Edward F. Ricketts SMCA	Central	Modify	Non- regulatory	Allow out-planting kelp on the reef without a scientific collecting permit (SCP).	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forest
2023-23MPA_4	Keith Rootsaert, G2KR	Edward F. Ricketts SMCA	Central	Modify	Non- regulatory	Scientific collecting permits/restoration: Allow spore dispersal by sporophyte bags without an SCP.	Protect restored kelp forests; improve diver safety from fishing boat propellers and fishing gear.
2023-23MPA_5	Keith Rootsaert, G2KR	Edward F. Ricketts SMCA	Central	Modify	Non- regulatory	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	Restore kelp forests.
2023-23MPA_6 _AM1	Keith Rootsaert, G2KR	Pacific Grove Marine Gardens SMCA	Central	Modify	Take	Prohibit recreational and commercial take of finfish when an petitioner-proposed "kelp restoration management permit" is active.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; protect restored kelp forest from storm damage.
2023-23MPA_7	Keith Rootsaert, G2KR	Pacific Grove Marine Gardens SMCA	Central	Modify	Take	Allow unlimited urchin removal	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-23MPA_8	Keith Rootsaert, G2KR	Pacific Grove Marine Gardens SMCA	Central	Modify	Non- regulatory	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023-23MPA_9	Keith Rootsaert, G2KR	Pacific Grove Marine Gardens SMCA	Central	Modify	Non- regulatory	Allow out-planting kelp on the reef without an SCP.	Restore kelp forests.
2023- 23MPA_10	Keith Rootsaert, G2KR	Pacific Grove Marine Gardens SMCA	Central	Modify	Non- regulatory	Scientific collecting permits/restoration: Allow spore dispersal by sporophyte bags without an SCP.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; protect restored kelp forests from storm damage.
2023- 23MPA_11 _AM1	Keith Rootsaert, G2KR	Carmel Bay SMCA	Central	Modify	Take	Prohibit recreational and commercial take of finfish when an petitioner-proposed “kelp restoration management permit” is active.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023- 23MPA_12	Keith Rootsaert, G2KR	Carmel Bay SMCA	Central	Modify	Take	Allow unlimited urchin removal	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023- 23MPA_13	Keith Rootsaert, G2KR	Carmel Bay SMCA	Central	Modify	Non- regulatory	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	Protect restored kelp forests; improve diver safety from fishing boat propellers and fishing gear.
2023- 23MPA_14	Keith Rootsaert, G2KR	Carmel Bay SMCA	Central	Modify	Non- regulatory	Allow out-planting kelp on the reef without an SCP.	Create new habitat for kelp and other marine life; expand diving opportunities.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023- 23MPA_15	Keith Rootsaert, G2KR	Carmel Bay SMCA	Central	Modify	Non- regulatory	Scientific collecting permits/restoration: Allow spore dispersal by sporophyte bags without an SCP.	Protect substrate from anchors in restored kelp forests.
2023- 23MPA_16	Keith Rootsaert, G2KR	Point Lobos SMR	Central	Modify	Classification /Take	Allow unlimited urchin removal	Allow restoration activities in MPAs.
2023- 23MPA_17	Keith Rootsaert, G2KR	Point Lobos SMR	Central	Modify	Non- regulatory	Allow pruning kelp canopy to promote growth and resilience to storms without an SCP.	The SCP process is difficult to navigate; wants to conduct restoration without scientific design to test effectiveness of methods
2023- 23MPA_18	Keith Rootsaert, G2KR	Point Lobos SMR	Central	Modify	Non- regulatory	Allow out-planting kelp on the reef without an SCP.	Protect and restore kelp forests; continued community engagement.
2023- 23MPA_19	Keith Rootsaert, G2KR	Point Lobos SMR	Central	Modify	Non- regulatory	Scientific collecting permits/restoration: Allow spore dispersal by sporophyte bags without an SCP.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023- 23MPA_20 _AM1	Keith Rootsaert, G2KR	N/A (New – Tanker's Reef SMR)	Central	Establish	Establish new MPA	Establish a new Tanker's Reef SMR near Monterey (193 acres, or 0.3 sq miles)	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023- 23MPA_21	Keith Rootsaert, G2KR	Not specified	Central	N/A	Non- regulatory	Create a regulatory pathway to allow placing of artificial reef structures and sunken ship for recreational diving.	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; protect restored kelp forests from storm damage.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023- 23MPA_22	Keith Rootsaert, G2KR	Not specified	Central	N/A	Non- regulatory	Allow placement of buoys in restoration areas	Protect restored kelp forests; improve diver safety from fishing boat propellers and fishing gear.
2023- 23MPA_23	Keith Rootsaert, G2KR	Not specified	Central	N/A	Non- regulatory	Develop a framework to evaluate and approve appropriate restoration and mitigation actions within MPAs and MMAs	Restore kelp forests.
2023- 23MPA_24 _AM1	Keith Rootsaert, G2KR	Not specified	Central	N/A	Non- regulatory	Establish a new process in CDFW's Scientific Collecting Permit Program for "kelp restoration management permits" as proposed by petitioner	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; protect restored kelp forests from storm damage.
2023- 23MPA_25	Keith Rootsaert, G2KR	N/A	Central	N/A	Non- regulatory	Consider proposed kelp restoration sites as Giant Giant Kelp Restoration-adopted reefs for continued kelp restoration	The SCP process is difficult to navigate which makes it harder to protect and restore kelp forests; restore kelp forests
2023- 23MPA_26	Keith Rootsaert, G2KR	Five MPAs	Central	N/A	Non- regulatory	Allow commercial urchin harvest in MPAs for Restoration	N/A

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023- 23MPA_27	Keith Rootsaert, G2KR	Five MPAs	Central	N/A	Non- regulatory	Exemption for “Wanton Waste Rule”	N/A
2023-23MPA- 28_AM1	Keith Rootsaert, G2KR	N/A	N/A	N/A	Non- regulatory	FGC and the Department promote kelp restoration collaboration on their website and in public outreach.	This is prioritized in California MPA Decadal Management Review, Near-term Priorities (ongoing- 2 years), Recommendation 16 to “Conduct more targeted outreach to specific audiences to connect stakeholders with coastal resources and to encourage stewardship and compliance with regulations.”
2023-24MPA_1 _AM1	Mike Beanan, Laguna Bluebelt Coalition	Laguna Beach no-take SMCA	South	Modify	Boundaries	Extend the Laguna Beach SMCA no-take regulation within the boundaries of the Dana Point SMCA down to the southern border of the City of Laguna Beach, with new southern boundary extending due west (Note: Boundaries of Dana Point SMCA would also need to be adjusted).	Make enforcement easier and more consistent with the same regulations covering the entire city; more effective outreach and education; overharvesting and substrate degradation adversely affects kelp beds in the Dana Point SMCA; the MLPA master plan for MPAs says to protect rocky habitat containing kelp; climate change leads to kelp decline so the area needs to be protected from fishing pressure; line of lobster trap buoys creates virtually impenetrable wall to migrating whales; supported by many Laguna Beach residents.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-27MPA_1 _AM1	Azsha Hudson, Environmental Defense Center (EDC)	Anacapa SMCA	South	Modify	Take	Amend existing SMCA, evaluating three options (solutions) and choose the one that best protects the eelgrass meadow while allowing for community access: Option 1: Change SMCA regulations to disallow commercial lobster fishing year round. Option 2: Change SMCA regulations to disallow hard bottomed fishing gear (including anchoring if applicable) near eelgrass meadows. Option 3: Extend the existing [Anacapa Island Special Closure] prohibition of deployment of lobster traps less than 20 ft deep to apply out to 30 meters (0-98.43 feet).	Protect eel grass meadow while allowing for community access; improve enforcement and compliance.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-28MPA_1 _AM1	Lisa Suatoni, National Resources Defense Council (NRDC)	N/A (New – Point Sal SMCA)	South	Establish	Establish new MPA	Create a new SMCA around Point Sal in central California (14.22 sq mi) except identify a traditional tribal name for the SMCA through consultation with the Chumash people- and allow recreational take of finfish by hook-and- line from shore.	This area is a rich, productive ecosystem that is a part of the biogeographic transition zone; a larval retention zone and a biological hotspot; culturally significant for the Chumash; improve network resilience by providing refugia; lead to equitable access to coastal resources; biologically important area for several marine mammals; undisturbed haul out; would help improve habitat replication in MPAs; adjacent terrestrial areas are relatively undisturbed; improved access for disadvantaged populations to coastal resources and fishing opportunities; climate resilience. Amended to a proposed SMCA that allows recreational take of finfish by hook-and-line from shore in recognition of: 1) the importance of this area for federally and non-federally recognized Chumash peoples, and 2) the importance of the area for shore-based subsistence and recreational fishermen.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-29MPA_1 _AM1	Lisa Suatoni, NRDC; Sam Cohen, Santa Ynez Band of Chumash Indians; and Azsha Hudson, EDC	N/A (New – Mishopshno SMCA)	South	Establish	Establish new MPA	Establish a new California-Chumash co- management SMCA near Santa Barbara to be named Mishopshno (with modified boundaries in a portion of the original boundaries, modified to reduce size in all dimensions covering 9.05 sq miles) that allows take by members of the Santa Ynez Band of Chumash Indians using hand based equipment for traditional, ceremonial, cultural and subsistence purposes, and allows recreational take of finfish from shore using hook and line.	1) Help meet the Master Plan's size and spacing guidelines for spacing between protected habitats, promoting connectivity in the network and representation of habitat types, 2) protect habitat attractive to marine wildlife, such as juvenile white sharks, and 3) honor the nearby historical Mishopshno village and cultural heritage of the Chumash in the area and restore management to the SYBCI of this portion of coastal waters. This petition calls for a co-management agreement between the State of California and the SYBCI through continued access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for all Chumash people. Original boundaries modified to reduce impact to commercial and recreational fishermen based on their feedback.
2023-32MPA_1	Ashley Eagle- Gibbs, Environmental Action Committee of West Marin (Marin EAC)	Duxbury Reef SMCA	North	Modify	Classification /Take	Reclassify Duxbury Reef SMCA to an SMR to prohibit take	Easier outreach and enforcement.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-32MPA_2	Ashley Eagle- Gibbs, Marin EAC	Duxbury Reef SMCA	North	Modify	Boundaries	Expand the MPA by extending southern boundary and moving northern boundary north to Double Point Special Closure	Protect the entire Duxbury reef habitat and make boundaries easier to interpret; largest shale reef in North America; ecologically significant.
2023-33MPA_1 _AM1	Laura Deehan, Environment CA Research and Policy Center (Environment California); and Marcela Gutiérrez- Graudins, Azul	Cabrillo SMR	South	Modify	Boundaries	Expand westward (to 3 mile state line) and northward (to New Hope Rock) by ≈9.99 sq mi.	Protect kelp forest habitat identified in the kelp forest resilience report. Amendment: Stakeholder feedback - commercial fishermen.
2023-33MPA_2 _AM1	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudins, Azul	Point Dume SMCA	South	Modify	Boundaries/ Take	Expand westward by 4.6 sq mi; Add allowance for recreational take from shore by hook and line and by spearfishing.	Protect kelp forest habitat identified in the kelp forest resilience report. Amendment: Stakeholder feedback - recreational fishermen.
2023-33MPA_3	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudins, Azul	South Point SMR	South	Modify	Boundaries	Expand westward by 26.3 sq mi	Protect kelp forest habitat identified in the kelp forest resilience report.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-33MPA_4	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudiņš, Azul	Gull Island SMR	South	Modify	Boundaries	Expand northward by 1.8 sq mi	Protect kelp forest habitat identified in the kelp forest resilience report.
2023-33MPA_5	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudiņš, Azul	Point Conception SMR	South	Modify	Boundaries	Expand eastward by 14.6 sq mi	Protect kelp forest habitat identified in the kelp forest resilience report.
2023-33MPA_6 _AM1	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudiņš, Azul	Natural Bridges SMR	Central	Modify	Boundaries	Expand southward _and eastward to the edge of Natural Bridges State Beach by ~14.5 sq mi.	Protect kelp forest habitat identified in the kelp forest resilience report. Amendment: Stakeholder feedback - MPA Collaborative
2023-33MPA_7 _AM1	Laura Deehan, Environment California; and Marcela Gutiérrez- Graudiņš, Azul	N/A (New – Pleasure Point SMCA)	Central	Establish	Establish new MPA	Designate 3.2 square miles as a new SMCA near Pleasure Point (Santa Cruz); allow recreational take from shore by hook and line and spearfishing only.	Protect kelp forest habitat identified in the kelp forest resilience report. Amendment: Stakeholder feedback - recreational fishermen.
2023-34MPA_1	Laura Deehan, Environment California and Marcela Gutiérrez- Graudiņš, Azul	Point Buchon SMCA	Central	Modify	Classification /Take	Reclassify SMCA to SMR to prohibit take	Improve enforcement and compliance; improve conservation outcomes.

Tracking ID (Petition #- unique action)	Petitioner	Affected MPA	Bio- region	MLPA Action Category	Action Type	Proposed Action	Justification Stated by the Petitioner
2023-34MPA_2	Laura Deehan, Environment California and Marcela Gutiérrez- Graudiņš, Azul	Farnsworth Onshore SMCA	South	Modify	Take	Change regulations to allow only recreational spearfishing within their boundaries	Take regulations are too complicated between the onshore and offshore MPAs; fishing activities can damage sensitive habitat; improve conservation outcomes.
2023-34MPA_3	Laura Deehan, Environment California and Marcela Gutiérrez- Graudiņš, Azul	Farnsworth Offshore SMCA	South	Modify	Take	Change regulations to allow only recreational spearfishing within their boundaries	Take regulations are too complicated between the onshore and offshore MPAs; fishing activities can damage sensitive habitat; improve conservation outcomes.



Tracking Number: (2023-23MPA_AM1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)

Name of primary contact person: Keith Rootsaert

Address: [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.

3. Overview (Required) - Summarize the proposed changes to regulations:

Kelp Restoration

Multiple methods in 3 SMCAs and 1 SMR.

Kelp Protection by Redesignation

Edward F. Ricketts State Marine Conservation Area to Edward F. Ricketts State Marine Reserve.

Pacific Grove Marine Gardens State Marine Conservation Area to Pacific Grove Marine Gardens State Marine Reserve.

Carmel Bay State Marine Conservation Area to Carmel Bay State Marine Reserve.

Kelp Protection by Designation

The Tanker's Reef enforcement area as Tanker's Reef State Marine Reserve.

Permission to deploy buoys

Prevent anchor damage to rocky reef denizens,

Navigation aid for kelp restoration activities.



Regulatory Pathway for
Sunken ship and other artificial reef structures

SCP Framework Changes
Management of Kelp Restoration

Public Outreach
Adopt a Reef for Kelp Restoration

4. Rationale (Required) - Describe the problem and the reason for the proposed change:

This [Giant Kelp Restoration](#) petition advances MLPA [goals](#) 1-6 and has strong community support of volunteers and grassroots funding. The MPA Collaborative network [lists](#) many of these issues on rows 77, 78, 83, & 88, and was supported by all present at the Monterey MPA Collaborative Meeting at Asilomar, August 16, 2023.

This petition is in alignment with the [prioritized recommendations](#) from the California Marine Protected Area Decadal Management Review, [near-term Priorities \(ongoing- 2 years\)](#), Cornerstone Governance, Regulatory and Review Framework, Recommendation 04. Apply what is learned from the first Decadal Management Review to support proposed changes to the MPA Network and Management Program. Also: Management Program, Policy and Permitting 18: Utilize OPC's Restoration and Mitigation Policy to develop a framework to evaluate and approve appropriate restoration and mitigation actions within MPAs and MMAs

Kelp Restoration

Due to widespread urchin barrens following the 2014-2016 marine heat wave and kelp biomass decline in central and northern California, kelp restoration is a proven remedy by scuba divers culling urchins to suppress grazing pressure. Early [results](#) at Tanker's Reef in Monterey have shown that divers culling urchins results in natural kelp recruitment and survival.

This petition will allow certified Kelp Restoration Specialty Divers, recreational and commercial fishermen, to participate in a Regenerative Fishery which suppresses grazing pressure from urchins and promotes giant kelp survival in three State Marine Conservation Areas: Edward F. Ricketts, Pacific Grove Marine Gardens, and Carmel Bay State Marine Conservation Areas and in "Whaler's Cove", a portion of the Point Lobos State Marine Reserve.

The methods will involve multiple techniques to suppress grazing pressure on kelp and to enhance kelp recruitment and survivorship and are explained in further detail in [Blueprint for Kelp Restoration in Monterey](#).

Suppression:

Hand culling of urchins.

Commercial harvest of urchins for urchin ranching and food sales.

Baiting & trapping urchins.

Utilizing natural defenses of acid weed.



Removing invasive marine algae.

Benefitting:

Pruning kelp canopy to promote growth and resilience to storms.

Out-planting kelp on the reef.

Spore dispersal by sporophyte bags.

Artificial reef structures.

All the methods employed will be detailed, discussed, and approved by the [Department](#) and work would be performed in coordination with other restoration activities. [Reef Check California](#) is our monitoring partner and will perform modified kelp forest monitoring surveys of the treated sites and controls. Reports on the project criteria will be discussed bi-weekly with the Department and as requested by the FGC.

We are asking that these kelp restoration methods be permitted without a SCP both inside and outside MPAs and will involve changes to sportfishing regulations to allow unlimited culling of urchins by hand tools, deploying sporophyte bags, etc. We ask that recreational fishermen be allowed to trap, harvest, capture for research, and cull urchins. Commercial fishing regulations will require a restoration exception to harvesting urchins in MPAs and exemption to the [wanton waste rule](#) for kelp restoration activities to allow commercial fishermen to cull urchins that are below the 4.5 cm minimum useful harvest size or for commercial divers to alternate between commercial and recreational fishing.

Kelp Protection by Redesignation:

The MPAs were mapped without considering the possibility of a native invertebrate species becoming overabundant and gobbling up most of the algae in the ecosystem combined with the Department's unwillingness to address that crisis. Urchin barrens have occurred sporadically for millennia as evidenced by the millions of urchin-made holes in the benthos at Tanker's Reef. 250 years ago, when southern sea otters were nearly extirpated by the fur trade, the abalone and urchins flourished and for 125 years kelp disappeared from the central coast until abalone were eventually overfished and take banned south of San Francisco in [1997](#) and giant kelp again became dominant. In 2007, the central coast MPA rules were formed to prohibit the take of any invertebrates, relying on a written provision for "restoration" as an "allowed" activity in MPAs but the Department does not "permit" restoration because they have conjured a de facto contradictory 7th goal of MPAs to "not disturb" them.

In Monterey the community led group Giant Kelp Restoration Project has successfully defended a kelp forest at Tanker's Reef and is was aspiring to restore large kelp forests on both sides of the Monterey Peninsula by SCP. FGC would not consider petitions allowing take of invertebrates in the SMCAs & SMRs until the [Decadal Management Review](#) could be completed. Now that the DMR has passed, this petition is seeking to begin the Adaptive Management Review Cycle for the central coast MPAs that have remained unmodified since 2007.

Kelp forests need protection from fishing pressure which has detrimental effects on species richness and kelp biomass. By designating the areas of kelp restoration as State Marine Reserves, fishing pressure will be considerably reduced. This is safer for the volunteer divers involved to avoid fishing boat traffic or getting hooked by fishing gear while diving.



Recreational sportfishers and kelp harvesters have expressed opposition to changing SMCAs to SMRs. The fishers feel that they will never get to fish in these areas again without a reversing petition that would be time consuming and difficult to obtain from FGC. The kelp harvester is only permitted to harvest kelp in non-SMRs and even though kelp harvest is part of our restoration plan, the concern is that the MPA designation may occur without an allowance for kelp harvest for abalone aquaculture. Although kelp harvest is essential for giant kelp resilience and survivorship, the Department and OPC don't acknowledge this interaction. To obtain a consensus of proponents we ask the Department to consider keeping the SMCA designation and writing in a SMCA specific rule that when a Kelp Restoration Management Permit is active, fin fishing is not allowed.

The MLPA is now administered in 3-year Adaptive Management Review Cycles and there is now flexibility in addressing the kelp crisis in a way that accomplishes the MLPA goals but also does not harm the environment in a long term, unforeseen and unwanted way that occurred on the central coast for the last 16 years. The [G2KR](#) projects at Lovers Cove and at [Tanker's Reef](#) demonstrated that the effort of the certified volunteer divers can be consistently and positively directed to restore kelp forests. Restoration work in these clearly described and familiar MPA boundaries would avoid confusion and guide diver effort in a predictable and effective strategy. In an Adaptive Management Review Cycle these methods can be continuously evaluated and adapted to the evolving stressors in the environment and as our knowledge, techniques, and capabilities at restoring kelp similarly evolve.

In future Adaptive Management Review Cycles the consequences of kelp restoration can be reviewed and the FGC may consider applying these methods more broadly, changing allowed methods, and allowing fishing under modified conditions. The other Monterey SMRs are acting as "controls" without treatment, but in the next review cycle we may ask for those SMRs to be treated as well in order to halt urchin migration and to achieve our goal, pledged to the [Kelp Forest Alliance](#), to restore 2000 acres of giant kelp around the Monterey Peninsula by 2030.

[Research](#) shows the reduced fishing pressure in places where fish are born will be beneficial to the fishery in the future when more fish live to adulthood and make more fish. In the future the kelp situation may change, and these places may be opened again in future management cycles to fishing for selected species, or in coordination with scientific monitoring protocols. The three State Marine Conservation Areas mentioned presently have diminished fish stocks and species richness and could benefit from a temporary fishing prohibition. This closure, in coordination with kelp restoration, will benefit adjacent areas with the "spillover effect" of the MPAs providing better fishing opportunities for participants.

This closure would not affect commercial fishermen who are prohibited from fishing in SMCAs already, but mostly the recreational fishermen who fish from shore. The fishermen fishing from boats are typically fishing further from shore because the fish are not as plentiful in the nearshore SMCAs now that the kelp has thinned. Although this closure would prohibit fishing at the Monterey Breakwater parking lot, there is still accessible fishing at the Commercial Wharf. Surf fishing from shore is generally not done at the Tanker's Reef area but further to the north at Sunset, Seacliff and New Brighton State Parks.



There are some fishermen that fish on the west side of Lovers Point and the north side of Point Pinos that would be displaced in a portion of the Pacific Grove Marine Gardens SMCA that is frequented by tourists and rented out by Pacific Grove for [weddings](#). To mitigate the loss of this fishing opportunity we recommend the replacement of the Del Monte Bathhouse [Pier](#), by others. It is not fair that our community group of volunteers is working hard to restore kelp and suppress kelp grazers while the state licenses individuals to fish in the same place and time with activities that are detrimental to that same kelp's growth and survival while also endangering diver's lives with propellers and fishing hooks.

The [Central Coast](#) Regional Stakeholder Group's intent during regional MLPA planning process (including MPA-specific goals/objectives and design considerations), adopted in April 2007, was found to be aligned with our proposal to improve the conservation status. In the [Regional Goals Design Considerations](#) #3."To the extent possible, site MPAs to prevent fishing effort shifts that would result in serial depletion" is what has happened in these places due to fishing pressure being concentrated in only a few accessible places. Redesignating the SMCAs as SMRs aligns with the original intent of more fishing prohibitions at two sites and stopping serial depletion of species at all three sites.

[Edward F. Ricketts SMCA](#) was proposed by the [RSG](#) to be split as half Edward F. Ricketts SMCA and half Edward C. Cooper SMR so the original intent was to make the area closest to the breakwater into a SMR. John Wolfe, Diving representative to the Regional Stakeholder Group, recalled that a disabled veteran testified that the breakwater was the "only place he could fish" so fishing by hook and line was decided to be allowed. There was a favorite wolf eel that lived on the wall and a spearfishermen shot it and threw it in a garbage can and divers were outraged so fishing by spear was not allowed on this site and the site is partially closed to fishing already. The fishermen fishing off the breakwater wall is a constant danger to divers at this most popular dive site on the west coast of North America and for safety it must stop. There is disabled access at the municipal wharf for fishermen.

[Pacific Grove Marine Gardens SMCA](#) was proposed by the [RSG](#) to be an SMR north of Point Pinos. Presently the delineation between Asilomar SMR and PG Marine Gardens SMCA is at Point Pinos, so the original intent was to make a large portion north of the peninsula protected as a SMR. This was the first area impacted by widespread urchin barrens in 2015 and is a high priority site for kelp restoration.

[Carmel Bay SMCA](#) was implemented as designed but has poor fishing opportunities and depletion of species because it is the only accessible fishing place south of the Monterey Peninsula until Malpasos Creek south of Point Lobos SMR. The loss of kelp forests exacerbates the problem because rockfish are born in kelp forests and take 8-10 years to reach maturity.

These MPAs were all [described](#) as "High Priority" sites by OPC's [research](#) that would have the highest probability of kelp restoration success.

Kelp Protection by Designation:

We propose that a portion of the Tanker's Reef enforcement area be designated the Tanker's Reef State Marine Reserve (working title).



A revised Tanker's Reef SMR of 193 acres from 685 acres, (23%)

This kelp forest was created by volunteer divers and is very vulnerable from fishing pressure because it is outside of MPA fishing prohibitions. Routinely fishermen in boats and kayaks take fish at the 11 acre kelp forest. The experimental 2.5-acre underwater cable grid is studied by OPC, CDFW, MBNMS, and Reef Check California. We try very hard to reduce externalities as much as possible to determine a natural process of kelp reforestation. Fishermen taking fish is an externality for the scientific design and confounds the results. Fishing gear often becomes entangled in underwater navigation cables used to guide divers. Furthermore, boat propellers are a threat to injure scuba divers in the area under the water.

Designating this area as a State Marine Reserve will also protect more sandy habitat at Del Monte Beach, the most eroded beach in California, at a time when the beach is nourished after the closure of [sand mining](#) in Southern Monterey Bay and studied by [USGS](#).

In the [Regional Goals Design Considerations](#) #8, "To the extent possible, site MPAs to take advantage of existing long-term monitoring studies" is consistent with designating Tanker's Reef, the site of CDFW/MBNMS and Reef Check surveys, as a State Marine Reserve.

Permission to deploy buoys



Boat anchors on rocky reefs often disturb sensitive marine habitat with their heavy chains scraping in an arc from the anchor to the boat. In a sensitive kelp restoration site that has frequent visits, dropping and recovery of the anchor disturbs the kelp we are trying to defend. By deploying a temporary buoy that the boats can attach to instead of dropping an anchor, the kelp is not disturbed. The use of buoys also aids the divers in the kelp restoration activity by providing underwater visual markers to guide where to cull the urchins and protect the kelp.

This petition seeks to allow seasonal deployment of certain colored and well-maintained buoys to be deployed in kelp restoration areas for the purpose of directing boats where to anchor and to direct divers for the purpose of kelp restoration.

Regulatory Pathway for an Artificial Reef:

Since 2010 Scuba divers have expressed an interest in diving on a sunken ship in Monterey Bay and this was proposed by the community group California Ships to Reefs and studied by the Office of National Marine Sanctuaries [in 2012](#). In 2017 Artificial Reefs was established as a priority for Monterey Bay National Marine Sanctuary Advisory Council. This was proposed to CDFW, but because the State has never permitted an artificial reef in State waters, this was never permitted. However, there are 52 other [artificial permitted reefs](#) in California including the Wheeler North Reef in Southern California. created in 2008.

Creating a shipwreck in protected nearshore waters deep enough to not be displaced by winter storms would be of interest to the scuba diving community. It will also serve as a unique scientific baseline to observe what is the order of marine life formation on a “blank” surface. It may also be beneficial to plant kelp on [artificial structures](#) better suited to kelp growth and marine aquaculture. This petition seeks a pathway for the FGC to determine if an artificial reef is in the public interest and establish an application process to obtain permission from CDFW and other state and federal agencies.

This request is in alignment with the [prioritized recommendations](#) from the California Marine Protected Area Decadal Management Review, near-term Priorities (ongoing- 2 years), Cornerstone Governance, MPA Statewide Leadership Team and Partner Coordination 09. Continue to coordinate and collaborate with OPC and other agencies on California’s ocean and coastal priorities to enhance coastal biodiversity, climate resiliency, human access and use, and a sustainable blue economy.

SCP Framework Changes

Management of Kelp Restoration

This petition is in furtherance of the [prioritized recommendations](#) from the California Marine Protected Area Decadal Management Review, near-term Priorities (ongoing- 2 years), Cornerstone Management Program, Policy and Permitting, Recommendations 17. Improve the application and approval process for scientific collecting permits. And 18. Utilize OPC’s Restoration and Mitigation Policy to develop a framework to evaluate and approve appropriate restoration and mitigation actions within MPAs and MMAs

We propose to establish a new process in CDFW’s Scientific Collecting Permit program for Restoration Permits. Presently the process available for the Department to manage restoration projects in marine ecosystems is the Scientific Collecting Permit process where



applicants submit applications for \$71.62 and pay \$269.08 for a [Special Use Permit](#) to operate a project with certain methods, species take restrictions, and reporting requirements. We request similar fees for Kelp Restoration Management Permits.

In our 2018 SCP permit with Reef Check we were not able to amend the permit to take sufficient red urchins and we had to abandon the project. In our 2 attempts to obtain SCPs for kelp restoration methods we were denied. Our pre-application to cull urchins in 3 SMCAs has been in process for 18 months before we can submit it into the SCP portal. The problem is that kelp restoration seeks to change a grazer species population within the defined area, but “Decision Tree” limits the take of species to not affect and change a species population within the area. This leads to situations where kelp restoration experiments are impossible because the number of permitted animals to take is very small and not enough to benefit the recruitment and survival of kelp forests. This led to the abandonment of our experiment at Lovers Cove in year 3 when we couldn’t remove sufficient red urchins.

The scientific method requires isolation of treatment methods and establishment of a control area. This places a limitation on kelp restoration practitioners to only employ singular methods when the best results are possible using [multiple methods](#). This also restricts the kelp restoration activities by attempting to answer scientific questions where the goal is simply kelp restoration and this scientific component is best accomplished by science divers rather than certified kelp restoration specialists. Once a permit application is obtained it is difficult to change as new discoveries are made that affect kelp survivorship and the process to attempt to amend a permit takes over a year. At the end of the typical 3 year SCP permit period the treatment must stop, and the 5 year post-restoration monitoring period begins. This is contradictory to the goals of kelp restoration and has led to similar abandonment of work in the treatment area at Tanker’s Reef where the effort is desired to be continued by the volunteers, but because the experiment stops after 3 years, the divers are not allowed to come back and tend the kelp forest they successfully created and defended. ~~The extension of Tanker’s Reef is “noticed” at the FGC and hopefully will be extended 5 years, but the point is that~~ Restoration should lead the activity and scientific experiments should evaluate, but not interfere with, or seek to end, the restoration effort.

Kelp Restoration is an allowable activity in SMRs, and now with the unanimous passage of [AB63](#), in SMCAs as well. However, restoration is allowed but not permitted. Our attempt to obtain a [Restoration Management Permit](#) was denied because the law does not address conspecifics. The Department could issue a Letter of Authorization, similar to the one written for the Monterey Bay Aquarium to repair intake pipes, but that is not available to us for inequitable reasons that support the built environment over the natural environment. The only available process we are told is available to us is the SCP process, which is exceedingly slow and inappropriate mechanism which, by rule, restricts the restoration activity to being deliberately inconsequential to improving the health of the MPA.

To remedy this, we petition that the Department establish a “Restoration” category in the SCP process that would allow restoration methods, coordinate with CDFW Research, and establish periodic reviews of restoration efforts, allow for 10-year project durations, and allow take of overpopulating species until the species reaches the threshold density observed pre-marine heatwave of 2014.



Additional comments on the SCP Portal and Process are that the website interface is very clunky and time consuming to complete, especially when submitting for take of multiple species at multiple locations and the program slowly populates look-up tables. The response to permit applications is not transparent, we never know who made the comments and there is not an ability to clarify and discuss the commenter's concerns. There is not an opportunity to have a conversation of what would be acceptable, only a rejection and it becomes incumbent on the petitioner to apply again and guess what would be acceptable. We ask that these issues be repaired in the SCP software and Kelp Restoration Management Permit Project approval process.

Public Outreach

This petition asks the FGC to affirm kelp restoration as public policy in MPAs and to celebrate community collaboration in kelp restoration, mitigating climate change, and conserving biodiversity in public outreach to stakeholders and encourage ocean stewardship. At the October 12 [FGC meeting](#) the commissioners suggested kelp practitioner leadership be unified under an "Adopt a Reef" community program, which is a wonderful idea, and we ask the commission to consider our proposed sites as G2KR adopted reefs. We ask that FGC and the Department promote kelp restoration collaboration on their website and in public outreach. This is [prioritized](#) in California Marine Protected Area Decadal Management Review, near-term Priorities (ongoing- 2 years), Cornerstone Management Program, Outreach and Education, Recommendation 16. Conduct more targeted outreach to specific audiences to connect stakeholders with coastal resources and to encourage stewardship and compliance with regulations.

Thank you for considering our petitions! In our effort to be succinct and consolidate seven petitions into one, we reduced arguments in favor of the proposal yet still exceeded 5 pages. Additional rationale/justification is available upon request and may be presented at future FGC meetings.

SECTION II: Optional Information

5. **Date of Petition:** 11/29/23 **AMENDED 1/13/25**
6. **Category of Proposed Change**
X Sport Fishing
X Commercial Fishing
☐ Hunting
X Other, please specify: MPAs, Section 6.32
7. **The proposal is to:** (*To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>*)
X Amend Title 14 Section(s): 29.06 and others.
X Add New Title 14 Section(s): 29.06 and others.
☐ Repeal Title 14 Section(s): [Click here to enter text.](#)
8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition 2021-025 & 2023-02**



Or ☐ Not applicable.

9. **Effective date:** If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: 4/1/24
10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See blue links in this document and supporting documents [here](#).
11. **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing: See Recreational Sea Urchin fiscal impact study in October FGC Meeting materials [here](#).
12. **Forms:** If applicable, list any forms to be created, amended or repealed: N/A

SECTION 3: FGC Staff Only

Date received:

FGC staff action:

- ☐ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action:

Meeting date for FGC consideration:

FGC action:

- ☐ Denied by FGC
☐ Denied - same as petition
Tracking Number
☐ Granted for consideration of regulation change

From: G2KR Team <[REDACTED]>
Sent: Monday, January 13, 2025 10:38 AM
To: Ashcraft, Susan <[REDACTED]> Keith Rootsart <[REDACTED]>
Cc: Andy Beahrs <[REDACTED]>; Calla Allison <[REDACTED]>; Rossi, Devon-Contractor@FGC <[REDACTED]>; FGC <FGC@fgc.ca.gov>
Subject: RE: Petition Amendment Request

Dear FGC Staff,

Attached is a revised version of our FGC-1 Petition Amendment Request. Please consider this our final amendment request and the Department can begin working on it.

I also revised the last email to reflect the new page number references in yellow highlighter. I also clarified R7 as requested by Susan Ashcraft in the petition 2023-23MPA below.

Dear FGC staff,

This email serves as our **Notice of Intent to Amend** and **Petition Amendment Request** for FGC Petition 2023-23MPA. See attached amended petition 2023-23-MPAR FINAL.

R1

Specific Change: Page 3. In Monterey the community led group Giant Giant Kelp Restoration Project has successfully defended a kelp forest at Tanker's Reef and is was aspiring to restore large kelp forests on both sides of the Monterey Peninsula by SCP.

Rationale: This change is to the tense of the word "is" to become "was". We had hoped to work in MPAs with a Scientific Collecting Permit and pre-applied with the Department for 22 months, but we did not obtain the permit. A SCP was instead granted to UCSC in 2024 at the sites we proposed.

R2

Specific Change: Page 4. Add the following paragraph: Recreational sportfishers and kelp harvesters have expressed opposition to changing SMCAs to SMRs. The fishers feel that they will never get to fish in these areas again without a reversing petition that would be time consuming and difficult to obtain from FGC. The kelp harvester is only permitted to harvest kelp in non-SMRs and even though kelp harvest is part of our restoration plan, the concern is that the MPA designation may occur without an allowance for kelp harvest for abalone aquaculture. Although kelp harvest is essential for giant kelp resilience and survivorship, the Department and OPC don't acknowledge this interaction. To obtain a consensus of proponents we ask the Department to consider keeping the SMCA designation and writing in a SMCA specific rule that when a Kelp Restoration Management Permit is active, fin fishing is not allowed.

Rationale: This amendment is intended to address concerns by opposition parties and develop a consensus. Because there are many interrelated and dependent parts to this petition and passage of any part is uncertain, it is important that each petition be more independent. For example: if the SMCAs are designated as SMRs but kelp canopy pruning is not allowed, it would shut down the Monterey Abalone Company or if the KRMP component is not implemented then there is no mechanism to sunset the SMR designation. Because the process of obtaining Adaptive

Management changes on the Central Coast may take more than 17 years, fishers are understandably reluctant to rely on Adaptive Management to reopen fishing in SMRs when fish stocks recover in the future. Changing SMCAs to have a provision for Kelp Restoration Management Permit fishing prohibition deconflicts the fishing and diving activities and puts a sunset date on the fishing prohibition which allows for depleted rockfish stocks in the SMCAs to recover.

While we understand that prohibiting fishing benefits kelp forests and biodiversity, the fishers deny the science is conclusive. Fishing is detrimental to kelp forests and is exacerbated by culling urchins that benefit the snails that eat the urchin carcasses and kelp. G2KR is not staffed to counter the fisher's assertions and so we will rely on the rationale that fishing in a kelp restoration site is a deadly conflict of activities. There is a similar petition 2023-33 for changing MPA designations in Santa Cruz that can argue the DMR scientific findings, and we will defer to Laura Deehan and Environment California to pursue that rationale in places without the compounding influence of kelp restoration activities and conflicting uses.

R3

Specific Change: Page 5. We propose that a portion of the Tanker's Reef enforcement area be designated the Tanker's Reef State Marine Reserve (working title).

Rationale: Add the words "a portion of" to the description. The enforcement area was set very large for enforcement purposes but is larger than needed for kelp restoration purposes. The area to the east of the reserve serves as the control area where restoration efforts are not undertaken. See map below for proposed area.



A revised Tanker's Reef SMR of 193 acres from 685 acres, (23%)

R4

Specific Change: Page 8. We request similar fees for Kelp Restoration Management Permits.

Rationale: Add the word “Management” to the permit name. The working title of Kelp Restoration Management Permit more closely aligns with the State Kelp Restoration Management Plan that informs the permit framework. See R6.

R5

Specific Change: Page 8. The extension of Tanker’s Reef is “noticed” at the FGC and hopefully will be extended 5 years, but the point is that Restoration should lead the activity and scientific experiments should evaluate, but not interfere with, or seek to end, the restoration effort.

Rationale: Delete a portion of the sentence. Our request to extend Tanker’s Reef for 5 years was denied for the sake of the scientific experiment and anticipation of the SCP in R1.

R6

Specific Change: Page 9. We ask that these issues be repaired in the SCP software and Kelp Restoration Management Permit Project approval process.

Rationale: Revised the working title of the permit. See R4.

R7

Overlooked Petition:

Page 9. Public Outreach by FGC and the Department is requested and should be reflected in the petition breakdown into subparts.

The petition reads:

Public Outreach

This petition asks the FGC to affirm kelp restoration as public policy in MPAs and to celebrate community collaboration in kelp restoration, mitigating climate change, and conserving biodiversity in public outreach to stakeholders and encourage ocean stewardship. At the October 12 [FGC meeting](#) the commissioners suggested kelp practitioner leadership be unified under an “Adopt a Reef” community program, which is a wonderful idea, and we ask the commission to consider our proposed sites as G2KR adopted reefs. We ask that FGC and the Department promote kelp restoration collaboration on their website and in public outreach. This is [prioritized](#) in California Marine Protected Area Decadal Management Review, near-term Priorities (ongoing- 2 years), Cornerstone Management Program, Outreach and Education, Recommendation 16. Conduct more targeted outreach to specific audiences to connect stakeholders with coastal resources and to encourage stewardship and compliance with regulations.

Please note

Petition 2023-23MPA was submitted 11/29/23. The MPA binning process delayed evaluation and consideration into 2025. FGC asking for petitioners to engage with organized opposition and creating corresponding amendments is an additional burden to unfunded public petitioners to revise plans even before the Department considers the petition. It is not clear how much to weaken the petition before it is historically opposed by the Department of “No”. How many cards should we take when the dealer is showing a face card? We engaged with the public, G2KR divers, local

governments, recreational fishers, commercial fishers, and kelp harvesters but we don't have written guidance or counter proposals from them to address their concerns. We have not received feedback on this amendment, and this is our best attempt to address concerns. We do not have consensus on this petition and/or this amendment.

Keith Rootsart

Giant Giant Kelp Restoration



Giant Giant Kelp Restoration Project

From: Ashcraft, Susan [REDACTED]
Sent: Thursday, January 9, 2025 2:07 PM
To: Keith Rootsart [REDACTED]
Cc: Andy Beahrs [REDACTED] Calla Allison [REDACTED] Rossi, Devon-
[REDACTED] G2KR Team <action@g2kr.com>; FGC
<FGC@fgc.ca.gov>
Subject: RE: Petition Amendment Request

Hi Keith,

Thanks for submitting your statement. I have a couple of questions.

First, I noticed that the changes you proposed below are integrated thoroughly into the form FGC 1 text, but the revised map showing the revised proposed Tankers Reef SMR is not part of the FGC 1 document. Could you please add (insert) the map image into the FGC 1 document after your description of the revised proposal on page 5?

Also, the rationale is built into your email but not also added to the FGC 1 document. That's fine – we can attach your email to support understanding of the revised petition.

Finally, I'm not sure I understand what your email says about R 7 (re: overlooked petition). Could you clarify?

If you don't have any other pieces of your petition you want to amend, then this can serve as more than a statement of intent, but also the actual amended petition request. i.e., we can move forward with it. Please confirm if that is the case.

In summary, two things:

1. Could you please add the map image of your revised proposed SMR boundaries to the FGC 1 form (preferably after the description on page 5)?
2. Do you plan to make other changes? If not, when you re-send with the map inserted into FGC 1, let us know this is your amendment request and we will forward for review to CDFW

Thank you,

Susan

From: Keith Rootsart [REDACTED]
Sent: Saturday, December 28, 2024 2:06 PM
To: FGC <FGC@fgc.ca.gov>
Cc: Andy Beahrs [REDACTED] Calla Allison [REDACTED] Ashcraft, Susan [REDACTED] G2KR Team <action@g2kr.com>
Subject: Petition Amendment Request

Dear FGC staff,

This email serves as our **Notice of Intent to Amend** and **Petition Amendment Request** for FGC Petition 2023-23MPA. See attached amended petition 2023-23-MPAR.

R1

Specific Change: Page 3. In Monterey the community led group Giant Giant Kelp Restoration Project has successfully defended a kelp forest at Tanker's Reef and is was aspiring to restore large kelp forests on both sides of the Monterey Peninsula by SCP.

Rationale: This change is to the tense of the word "is" to become "was". We had hoped to work in MPAs with a Scientific Collecting Permit and pre-applied with the Department for 22 months, but we did not obtain the permit. A SCP was instead granted to UCSC in 2024 at the sites we proposed.

R2

Specific Change: Page 4. Add the following paragraph: Recreational sportfishers and kelp harvesters have expressed opposition to changing SMCAs to SMRs. The fishers feel that they will never get to fish in these areas again without a reversing petition that would be time consuming and difficult to obtain from FGC. The kelp harvester is only permitted to harvest kelp in non-SMRs and even though kelp harvest is part of our restoration plan, the concern is that the MPA designation may occur without an allowance for kelp harvest for abalone aquaculture. Although kelp harvest is essential for giant kelp resilience and survivorship, the Department and OPC don't acknowledge this interaction. To obtain a consensus of proponents we ask the Department to consider keeping the SMCA designation and writing in a SMCA specific rule that when a Kelp Restoration Management Permit is active, fin fishing is not allowed.

Rationale: This amendment is intended to address concerns by opposition parties and develop a consensus. Because there are many interrelated and dependent parts to this petition and passage of any part is uncertain, it is important that each petition be more independent. For example: if the SMCAs are designated as SMRs but kelp canopy pruning is not allowed, it would shut down the Monterey Abalone Company or if the KRMP component is not implemented then there is no mechanism to sunset the SMR designation. Because the process of obtaining Adaptive Management changes on the Central Coast may take more than 17 years, fishers are understandably reluctant to rely on Adaptive Management to reopen fishing in SMRs when fish stocks recover in the future. Changing SMCAs to have a provision for Kelp Restoration Management Permit fishing prohibition deconflicts the fishing and diving activities and puts a sunset date on the fishing prohibition which allows for depleted rockfish stocks in the SMCAs to recover.

While we understand that prohibiting fishing benefits kelp forests and biodiversity, the fishers deny the science is conclusive. Fishing is detrimental to kelp forests and is exacerbated by culling urchins that benefit the snails that eat the urchin carcasses and kelp. G2KR is not staffed to counter the fisher's assertions and so we will rely on the rationale that fishing in a kelp restoration site is a deadly conflict of activities. There is a similar petition 2023-33 for changing MPA designations in Santa Cruz that can argue the DMR scientific findings, and we will defer to Laura Deehan and Environment California to pursue that rationale in places without the compounding influence of kelp restoration activities and conflicting uses.

R3

Specific Change: Page 5. We propose that a portion of the Tanker's Reef enforcement area be designated the Tanker's Reef State Marine Reserve (working title).

Rationale: Add the words "a portion of" to the description. The enforcement area was set very large for enforcement purposes but is larger than needed for kelp restoration purposes. The area to the east of the reserve serves as the control area where restoration efforts are not undertaken. See map below for proposed area

R4

Specific Change: Page 7. We request similar fees for Kelp Restoration Management Permits.

Rationale: Add the word "Management" to the permit name. The working title of Kelp Restoration Management Permit more closely aligns with the State Kelp Restoration Management Plan that informs the permit framework. See R6.

R5

Specific Change: Page 7. The extension of Tanker's Reef is "noticed" at the FGC and hopefully will be extended 5 years, but the point is that Restoration should lead the activity and scientific experiments should evaluate, but not interfere with, or seek to end, the restoration effort.

Rationale: Delete a portion of the sentence. Our request to extend Tanker's Reef for 5 years was denied for the sake of the scientific experiment and anticipation of the SCP in R1.

R6

Specific Change: Page 8. We ask that these issues be repaired in the SCP software and Kelp Restoration Management Permit Project approval process.

Rationale: Revised the working title of the permit. See R4.

R7

Overlooked Petition:

Page 8. Public Outreach by FGC and the Department is requested and should be reflected in the petition breakdown into subparts.

Please note

Petition 2023-23MPA was submitted 11/29/23. The MPA binning process delayed evaluation and consideration into 2025. FGC asking for petitioners to engage with organized opposition and creating corresponding amendments is an additional burden to unfunded public petitioners to revise plans even before the Department considers the petition. It is not clear how much to weaken the petition before it is historically opposed by the Department of “No”. How many cards should we take when the dealer is showing a face card? We engaged with the public, G2KR divers, local governments, recreational fishers, commercial fishers, and kelp harvesters but we don’t have written guidance or counter proposals from them to address their concerns. We have not received feedback on this amendment, and this is our best attempt to address concerns. We do not have consensus on this petition and/or this amendment.

Keith Rootsart

Giant Giant Kelp Restoration

From: G2KR Team <[REDACTED]>
Sent: Monday, January 13, 2025 10:38 AM
To: Ashcraft, Susan <[REDACTED]> Keith Rootsaert <[REDACTED]>
Cc: Andy Beahrs <[REDACTED]>; Calla Allison <[REDACTED]>; Rossi, Devon-Contractor@FGC <[REDACTED]>; FGC <FGC@fgc.ca.gov>
Subject: RE: Petition Amendment Request

Dear FGC Staff,

Attached is a revised version of our FGC-1 Petition Amendment Request. Please consider this our final amendment request and the Department can begin working on it.

I also revised the last email to reflect the new page number references in yellow highlighter. I also clarified R7 as requested by Susan Ashcraft in the petition 2023-23MPA below.

Dear FGC staff,

This email serves as our **Notice of Intent to Amend** and **Petition Amendment Request** for FGC Petition 2023-23MPA. See attached amended petition 2023-23-MPAR FINAL.

R1

Specific Change: Page 3. In Monterey the community led group Giant Giant Kelp Restoration Project has successfully defended a kelp forest at Tanker's Reef and is was aspiring to restore large kelp forests on both sides of the Monterey Peninsula by SCP.

Rationale: This change is to the tense of the word "is" to become "was". We had hoped to work in MPAs with a Scientific Collecting Permit and pre-applied with the Department for 22 months, but we did not obtain the permit. A SCP was instead granted to UCSC in 2024 at the sites we proposed.

R2

Specific Change: Page 4. Add the following paragraph: Recreational sportfishers and kelp harvesters have expressed opposition to changing SMCAs to SMRs. The fishers feel that they will never get to fish in these areas again without a reversing petition that would be time consuming and difficult to obtain from FGC. The kelp harvester is only permitted to harvest kelp in non-SMRs and even though kelp harvest is part of our restoration plan, the concern is that the MPA designation may occur without an allowance for kelp harvest for abalone aquaculture. Although kelp harvest is essential for giant kelp resilience and survivorship, the Department and OPC don't acknowledge this interaction. To obtain a consensus of proponents we ask the Department to consider keeping the SMCA designation and writing in a SMCA specific rule that when a Kelp Restoration Management Permit is active, fin fishing is not allowed.

Rationale: This amendment is intended to address concerns by opposition parties and develop a consensus. Because there are many interrelated and dependent parts to this petition and passage of any part is uncertain, it is important that each petition be more independent. For example: if the SMCAs are designated as SMRs but kelp canopy pruning is not allowed, it would shut down the Monterey Abalone Company or if the KRMP component is not implemented then there is no mechanism to sunset the SMR designation. Because the process of obtaining Adaptive

Management changes on the Central Coast may take more than 17 years, fishers are understandably reluctant to rely on Adaptive Management to reopen fishing in SMRs when fish stocks recover in the future. Changing SMCAs to have a provision for Kelp Restoration Management Permit fishing prohibition deconflicts the fishing and diving activities and puts a sunset date on the fishing prohibition which allows for depleted rockfish stocks in the SMCAs to recover.

While we understand that prohibiting fishing benefits kelp forests and biodiversity, the fishers deny the science is conclusive. Fishing is detrimental to kelp forests and is exacerbated by culling urchins that benefit the snails that eat the urchin carcasses and kelp. G2KR is not staffed to counter the fisher's assertions and so we will rely on the rationale that fishing in a kelp restoration site is a deadly conflict of activities. There is a similar petition 2023-33 for changing MPA designations in Santa Cruz that can argue the DMR scientific findings, and we will defer to Laura Deehan and Environment California to pursue that rationale in places without the compounding influence of kelp restoration activities and conflicting uses.

R3

Specific Change: Page 5. We propose that a portion of the Tanker's Reef enforcement area be designated the Tanker's Reef State Marine Reserve (working title).

Rationale: Add the words "a portion of" to the description. The enforcement area was set very large for enforcement purposes but is larger than needed for kelp restoration purposes. The area to the east of the reserve serves as the control area where restoration efforts are not undertaken. See map below for proposed area.



A revised Tanker's Reef SMR of 193 acres from 685 acres, (23%)

R4

Specific Change: Page 8. We request similar fees for Kelp Restoration Management Permits.

Rationale: Add the word “Management” to the permit name. The working title of Kelp Restoration Management Permit more closely aligns with the State Kelp Restoration Management Plan that informs the permit framework. See R6.

R5

Specific Change: Page 8. The extension of Tanker’s Reef is “noticed” at the FGC and hopefully will be extended 5 years, but the point is that Restoration should lead the activity and scientific experiments should evaluate, but not interfere with, or seek to end, the restoration effort.

Rationale: Delete a portion of the sentence. Our request to extend Tanker’s Reef for 5 years was denied for the sake of the scientific experiment and anticipation of the SCP in R1.

R6

Specific Change: Page 9. We ask that these issues be repaired in the SCP software and Kelp Restoration Management Permit Project approval process.

Rationale: Revised the working title of the permit. See R4.

R7

Overlooked Petition:

Page 9. Public Outreach by FGC and the Department is requested and should be reflected in the petition breakdown into subparts.

The petition reads:

Public Outreach

This petition asks the FGC to affirm kelp restoration as public policy in MPAs and to celebrate community collaboration in kelp restoration, mitigating climate change, and conserving biodiversity in public outreach to stakeholders and encourage ocean stewardship. At the October 12 [FGC meeting](#) the commissioners suggested kelp practitioner leadership be unified under an “Adopt a Reef” community program, which is a wonderful idea, and we ask the commission to consider our proposed sites as G2KR adopted reefs. We ask that FGC and the Department promote kelp restoration collaboration on their website and in public outreach. This is [prioritized](#) in California Marine Protected Area Decadal Management Review, near-term Priorities (ongoing- 2 years), Cornerstone Management Program, Outreach and Education, Recommendation 16. Conduct more targeted outreach to specific audiences to connect stakeholders with coastal resources and to encourage stewardship and compliance with regulations.

Please note

Petition 2023-23MPA was submitted 11/29/23. The MPA binning process delayed evaluation and consideration into 2025. FGC asking for petitioners to engage with organized opposition and creating corresponding amendments is an additional burden to unfunded public petitioners to revise plans even before the Department considers the petition. It is not clear how much to weaken the petition before it is historically opposed by the Department of “No”. How many cards should we take when the dealer is showing a face card? We engaged with the public, G2KR divers, local

governments, recreational fishers, commercial fishers, and kelp harvesters but we don't have written guidance or counter proposals from them to address their concerns. We have not received feedback on this amendment, and this is our best attempt to address concerns. We do not have consensus on this petition and/or this amendment.

Keith Rootsart

Giant Giant Kelp Restoration



From: Ashcraft, Susan [REDACTED]
Sent: Thursday, January 9, 2025 2:07 PM
To: Keith Rootsart [REDACTED]
Cc: Andy Beahrs [REDACTED] Calla Allison [REDACTED] Rossi, Devon-
[REDACTED] G2KR Team <action@g2kr.com>; FGC
<FGC@fgc.ca.gov>
Subject: RE: Petition Amendment Request

Hi Keith,

Thanks for submitting your statement. I have a couple of questions.

First, I noticed that the changes you proposed below are integrated thoroughly into the form FGC 1 text, but the revised map showing the revised proposed Tankers Reef SMR is not part of the FGC 1 document. Could you please add (insert) the map image into the FGC 1 document after your description of the revised proposal on page 5?

Also, the rationale is built into your email but not also added to the FGC 1 document. That's fine – we can attach your email to support understanding of the revised petition.

Finally, I'm not sure I understand what your email says about R 7 (re: overlooked petition). Could you clarify?

If you don't have any other pieces of your petition you want to amend, then this can serve as more than a statement of intent, but also the actual amended petition request. i.e., we can move forward with it. Please confirm if that is the case.

In summary, two things:

1. Could you please add the map image of your revised proposed SMR boundaries to the FGC 1 form (preferably after the description on page 5)?
2. Do you plan to make other changes? If not, when you re-send with the map inserted into FGC 1, let us know this is your amendment request and we will forward for review to CDFW

Thank you,

Susan

From: Keith Rootsart [REDACTED]
Sent: Saturday, December 28, 2024 2:06 PM
To: FGC <FGC@fgc.ca.gov>
Cc: Andy Beahrs [REDACTED] Calla Allison [REDACTED] Ashcraft, Susan [REDACTED] G2KR Team <action@g2kr.com>
Subject: Petition Amendment Request

Dear FGC staff,

This email serves as our **Notice of Intent to Amend** and **Petition Amendment Request** for FGC Petition 2023-23MPA. See attached amended petition 2023-23-MPAR.

R1

Specific Change: Page 3. In Monterey the community led group Giant Giant Kelp Restoration Project has successfully defended a kelp forest at Tanker's Reef and is was aspiring to restore large kelp forests on both sides of the Monterey Peninsula by SCP.

Rationale: This change is to the tense of the word "is" to become "was". We had hoped to work in MPAs with a Scientific Collecting Permit and pre-applied with the Department for 22 months, but we did not obtain the permit. A SCP was instead granted to UCSC in 2024 at the sites we proposed.

R2

Specific Change: Page 4. Add the following paragraph: Recreational sportfishers and kelp harvesters have expressed opposition to changing SMCAs to SMRs. The fishers feel that they will never get to fish in these areas again without a reversing petition that would be time consuming and difficult to obtain from FGC. The kelp harvester is only permitted to harvest kelp in non-SMRs and even though kelp harvest is part of our restoration plan, the concern is that the MPA designation may occur without an allowance for kelp harvest for abalone aquaculture. Although kelp harvest is essential for giant kelp resilience and survivorship, the Department and OPC don't acknowledge this interaction. To obtain a consensus of proponents we ask the Department to consider keeping the SMCA designation and writing in a SMCA specific rule that when a Kelp Restoration Management Permit is active, fin fishing is not allowed.

Rationale: This amendment is intended to address concerns by opposition parties and develop a consensus. Because there are many interrelated and dependent parts to this petition and passage of any part is uncertain, it is important that each petition be more independent. For example: if the SMCAs are designated as SMRs but kelp canopy pruning is not allowed, it would shut down the Monterey Abalone Company or if the KRMP component is not implemented then there is no mechanism to sunset the SMR designation. Because the process of obtaining Adaptive Management changes on the Central Coast may take more than 17 years, fishers are understandably reluctant to rely on Adaptive Management to reopen fishing in SMRs when fish stocks recover in the future. Changing SMCAs to have a provision for Kelp Restoration Management Permit fishing prohibition deconflicts the fishing and diving activities and puts a sunset date on the fishing prohibition which allows for depleted rockfish stocks in the SMCAs to recover.

While we understand that prohibiting fishing benefits kelp forests and biodiversity, the fishers deny the science is conclusive. Fishing is detrimental to kelp forests and is exacerbated by culling urchins that benefit the snails that eat the urchin carcasses and kelp. G2KR is not staffed to counter the fisher's assertions and so we will rely on the rationale that fishing in a kelp restoration site is a deadly conflict of activities. There is a similar petition 2023-33 for changing MPA designations in Santa Cruz that can argue the DMR scientific findings, and we will defer to Laura Deehan and Environment California to pursue that rationale in places without the compounding influence of kelp restoration activities and conflicting uses.

R3

Specific Change: Page 5. We propose that a portion of the Tanker's Reef enforcement area be designated the Tanker's Reef State Marine Reserve (working title).

Rationale: Add the words "a portion of" to the description. The enforcement area was set very large for enforcement purposes but is larger than needed for kelp restoration purposes. The area to the east of the reserve serves as the control area where restoration efforts are not undertaken. See map below for proposed area

R4

Specific Change: Page 7. We request similar fees for Kelp Restoration Management Permits.

Rationale: Add the word "Management" to the permit name. The working title of Kelp Restoration Management Permit more closely aligns with the State Kelp Restoration Management Plan that informs the permit framework. See R6.

R5

Specific Change: Page 7. The extension of Tanker's Reef is "noticed" at the FGC and hopefully will be extended 5 years, but the point is that Restoration should lead the activity and scientific experiments should evaluate, but not interfere with, or seek to end, the restoration effort.

Rationale: Delete a portion of the sentence. Our request to extend Tanker's Reef for 5 years was denied for the sake of the scientific experiment and anticipation of the SCP in R1.

R6

Specific Change: Page 8. We ask that these issues be repaired in the SCP software and Kelp Restoration Management Permit Project approval process.

Rationale: Revised the working title of the permit. See R4.

R7

Overlooked Petition:

Page 8. Public Outreach by FGC and the Department is requested and should be reflected in the petition breakdown into subparts.

Please note

Petition 2023-23MPA was submitted 11/29/23. The MPA binning process delayed evaluation and consideration into 2025. FGC asking for petitioners to engage with organized opposition and creating corresponding amendments is an additional burden to unfunded public petitioners to revise plans even before the Department considers the petition. It is not clear how much to weaken the petition before it is historically opposed by the Department of “No”. How many cards should we take when the dealer is showing a face card? We engaged with the public, G2KR divers, local governments, recreational fishers, commercial fishers, and kelp harvesters but we don’t have written guidance or counter proposals from them to address their concerns. We have not received feedback on this amendment, and this is our best attempt to address concerns. We do not have consensus on this petition and/or this amendment.

Keith Rootsart

Giant Giant Kelp Restoration



Tracking Number: (2023-27MPA AM1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)

Name of primary contact person: Azsha Hudson

Address: [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code

3. Overview (Required) - Summarize the proposed changes to regulations: ~~This petition seeks to reclassify the Anacapa State Marine Conservation Area (SMCA) as a State Marine Reserve (SMR) or at a minimum reclassify the portion of the SMCA from shore to at least 30 meters depth to better protect eelgrass habitat.~~

This petition seeks to protect the eelgrass meadows located in the Anacapa Island State Marine Conservation Area (SMCA) from hard bottomed objects such as the gear type listed for the commercial lobster fishery and anchors used for vessels. We ask the Commission to evaluate the below solutions and choose the one that best protects the eelgrass meadow while allowing for community access:

- Change current regulations to disallow commercial lobster fishing year round
- Change current regulations to disallow hard bottomed fishing gear (including anchoring if applicable) near eelgrass meadows
- Change the existing border, prohibiting the deployment of lobster traps from 0-30 meters (0-98.43 feet) instead of the existing 0-20 feet



4. Rationale (Required) - Describe the problem and the reason for the proposed change:

Numerous state and federal policies underscore the importance of eelgrass as an important yet vulnerable species that provides nursery habitat for fish, reduces coastal erosion, acts as a carbon sink, and increases species diversity by providing three-dimensional structure on sandy bottomed habitats.

Based on a scientific study conducted at the Anacapa SMCA from 2016 to 2019¹, and a growing body of literature on eelgrass recruitment and ecology, there is compelling evidence that seasonally occurring lobster trapping and anchoring in the SMCA is destroying eelgrass beds that are otherwise thriving in the adjacent Anacapa SMR.

~~The limited subset of pelagic fishing methods allowed at the Anacapa SMCA also creates challenges for enforcement by requiring officers to board vessels and confirm compliance on an individual basis.~~ This petition requests Fish and Game Commission (FGC) approval to support the goals of the Marine Life Protection Act (MLPA), align with state and federal policies focused on eelgrass resilience and health, and protect important eelgrass and associated marine life at Anacapa Island.

SECTION II: Optional Information

5. Date of Petition: ~~11/17/2023~~ AMENDED 1/17/2025

Category of Proposed Change

- 6.** ☐ Sport Fishing
☐ ~~Commercial~~ Commercial Fishing

X Other, please specify: MPAs, Section 632.

7. The proposal is to: *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*

- X Amend Title 14 Section(s): [Westlaw regulations.](#)
☐ Add New Title 14 Section(s): Click here to enter text.
☐ Repeal Title 14 Section(s): Click here to enter text.

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition Click here to enter text.
Or X Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency: November 1, ~~2024~~ 2025

¹Jessica Altstatt (2021). Island Eelgrass (*Zostera pacifica*): Focused Assessment of Condition and Extent of Meadows and Biological Monitoring of Associated Fish and Invertebrate Communities



10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents:

- Petition narrative on eelgrass at Anacapa SMCA
- White paper research from Jessica Alstatt.

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

This petition protects habitat that confers biodiversity and biomass benefits that enhance the health of Anacapa Island and surrounding ecosystems. Eelgrass beds filter nutrients, stabilize sediments, and increase complexity of the substrate and effective habitat for marine life. As demonstrated by numerous reports of lobster traps “fishing the line” of the Anacapa SMR, fishers perceive that the nearby fully protected MPA has created a beneficial habitat for lobster trapping. Notably, a recent study on the California spiny lobster fishery determined that the short-term losses from a restrictive MPA is compensated by an over 200% increase in total catch after about 6 years of MPA designation.²

This petition is intended to protect ~~would close~~ the Anacapa SMCA eelgrass meadow and associated biodiversity from ~~to~~ lobster trapping which occurs during the months of November and December. The proposed amendment would extend the prohibition to include these months, and would also prevent anchoring damage from pelagic fishing efforts. The three potential options we offer to the Commission ~~While converting this SMCA into an SMR may~~ have short term impacts on recreational and commercial fishing, any such impacts will be offset by the long-term ecosystem wide benefits of protecting eelgrass function at this valuable site.

12. Forms: If applicable, list any forms to be created, amended or repealed:

[\[Click here to enter text. \]](#)

SECTION 3: FGC Staff Only

Date received: 11/17/2023 ~~AMENDED~~ 1/17/2025

FGC staff action:

- ☐ Accept - complete
☐ Reject - incomplete
☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

² Lenihan, H.S., Gallagher, J.P., Peters, J.R. et al. Evidence that spillover from Marine Protected Areas benefits the spiny lobster (*Panulirus interruptus*) fishery in southern California. Sci Rep 11, 2663 (2021). <https://doi.org/10.1038/s41598-021-82371-5>



State of California – Fish and Game Commission

PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE

FGC 1 (Rev 06/19) Page 4 of 4

- ☐ Denied by FGC
- ☐ Denied - same as petition Tracking Number
- ☐ Granted for consideration of regulation change



January 17, 2025

California Fish and Game Commission
715 P Street, 16th Floor, Sacramento, CA 95814

**Re: Anacapa Island State Marine Conservation Area (2023-27MPA) Revised
Petition Cover Message**

Dear President Murray and honorable commissioners:

In November 2023, the Environmental Defense Center (“EDC”) submitted a petition (2023-27MPA) to reclassify the Anacapa Island State Marine Conservation Area (“Anacapa SMCA”) as a State Marine Reserve (“SMR”) or, at a minimum, to reclassify the portion of the SMCA from shore to at least 30 meters depth to better protect eelgrass habitat. We now request that the Fish and Game Commission (“FGC”) and California Department of Fish and Game (“CDFW”) evaluate the below solutions and choose the one that best protects the eelgrass meadow while allowing for community access:

- Change current regulations to disallow commercial lobster fishing year round
- Change current regulations to disallow hard bottomed fishing gear (including anchoring if applicable) near eelgrass meadows
- Change the existing border, prohibiting the deployment of lobster traps from 0-30 meters (0-98.43 feet) instead of the existing 0-20 feet

We came to the above alternative solutions after extensive and ongoing community outreach (please refer to EDC’s July 31, 2024, letter re: Petition for Anacapa State Marine Conservation Area – Agenda Item 6(c) for more detailed explanation (see attached). The goal of our petition is to protect the historic eelgrass meadow that has gone through rehabilitation and replantation efforts and is being directly threatened by hard bottomed lobster traps, with potential impact from other hard bottomed items like anchors.

Sincerely,

Azsha Hudson
Marine Conservation Analyst & Program Manager





January 17, 2025

California Fish and Game Commission
715 P Street, 16th Floor, Sacramento, CA 95814

**Re: Anacapa Island State Marine Conservation Area (2023-27MPA) Revised
Petition Cover Message**

Dear President Murray and honorable commissioners:

In November 2023, the Environmental Defense Center (“EDC”) submitted a petition (2023-27MPA) to reclassify the Anacapa Island State Marine Conservation Area (“Anacapa SMCA”) as a State Marine Reserve (“SMR”) or, at a minimum, to reclassify the portion of the SMCA from shore to at least 30 meters depth to better protect eelgrass habitat. We now request that the Fish and Game Commission (“FGC”) and California Department of Fish and Game (“CDFW”) evaluate the below solutions and choose the one that best protects the eelgrass meadow while allowing for community access:

- Change current regulations to disallow commercial lobster fishing year round
- Change current regulations to disallow hard bottomed fishing gear (including anchoring if applicable) near eelgrass meadows
- Change the existing border, prohibiting the deployment of lobster traps from 0-30 meters (0-98.43 feet) instead of the existing 0-20 feet

We came to the above alternative solutions after extensive and ongoing community outreach (please refer to EDC’s July 31, 2024, letter re: Petition for Anacapa State Marine Conservation Area – Agenda Item 6(c) for more detailed explanation (see attached). The goal of our petition is to protect the historic eelgrass meadow that has gone through rehabilitation and replantation efforts and is being directly threatened by hard bottomed lobster traps, with potential impact from other hard bottomed items like anchors.

Sincerely,

Azsha Hudson
Marine Conservation Analyst & Program Manager





Petition2025-15MPA Amendment Cover Message

The revisions to this petition involve two sets of informational changes: amendments to the original petition actions and additional stakeholder feedback/rationale that has been gathered over the last year.

Petition actions being revised:

- Modification of options 3 and 4 in the original petition to align with federal feedback and existing regulations in Groundfish Exclusion Areas (GEAs). Rather than only allowing “surface-fishing-methods” the options now restrict “bottom-contact-gears,” like the GEAs. This change was made so that entirely new language and definitions do not need to be drafted in a case options 3 or 4 are selected. (Located on page 3, 11, and 18)
- Addition of a 5th and 6th option consisting of only non-hook-and-line gear methods for consideration, this is not an additional action, just a different combination of allowable methods from the original petition. The new options 5 and 6 would only allow recreational spearfishing of pelagic finfish (option 5) or highly migratory species (option 6) and would allow the commercial take of swordfish by harpoon (options 5 and 6). These options were added to be the least invasive as possible in terms of take, be possibly easier to enforce than the other hook-and-line options and would solve the commercial swordfish gear drift problems for harpoon gears (but not for DSBG). (Located on page 3 and 18)
- Modification of the optional nearshore/offshore MPA boarder at the Santa Barbara Island MPA to a straight line between two points of latitude and longitude versus the original boarder being the 1 nautical mile line from the island. The reason for this change is to align to the MPA design criteria set in the MLPA which states to not use odd shapes or curves, only straight lines between tenth or whole minute latitudes and longitudes. (Located on page 3, 19, and 20)
- Modification of how deep-set-buoy-gear (DSBG) will be considered in the petition. Currently DSBG is only a federal fishery and still in its EFP stage at the State level, consideration of its allowance inside the state waters of MPAs will remain pending with the FGC and CDFW until DSBG is a state fishery. Until then, only a federal process may allow DSBG in the federal portions of the MPAs. Therefore, DSBG has been isolated from all of the options, now having its own action section due to the unique case of that process. (Located on page 4, 16, and 17)

Additional stakeholder feedback/rationale being added:

- Commercial swordfish gear(s) uncontrollable movement into primarily these MPAs, per MDFE effort data, poses problems that must be resolved. (Located on pages 11-13)
- Naval closures local to the Channel Islands restricting most offshore fishing opportunity except near two of the petition MPAs. (Located on page 13)
- Additional information pertaining to adaptive management, the MPA Master Plans (2008 and 2016), the MLPA, and climate resiliency in the scope of this specific petition. (Located on pages 14-15)



Tracking Number: (2023-15MPA_AM2)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages.

1. Person or organization requesting the change (Required)

Name of primary contact person: Blake Hermann

Address: [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested:

-Fish and Game Code (FGC) Division 1, Chapter 2, Sections 200, 205c, 265, and 399

-Fish and Game Code (FGC) Division 2, Chapter 5, Sections 1590 and 1591

-Fish and Game Code (FGC) Division 3, Chapter 10.5, Sections 2860 and 2861

-Fish and Game Code (FGC) Division 6, Chapter 6, Section 6750

-Public Resource Code (PRC) Division 27, Chapter 7, Sections 36725(a) and 36725(e)

3. Overview (Required) - Summarize the proposed changes to regulations:

This petition requests a modification to three Marine Protected Areas (MPAs) off Southern Santa Cruz Island and Santa Barbara Island, known as the Footprint Marine Reserve (The Footprint), Gull Island Marine Reserve (Gull Island), and The Santa Barbara Island Marine Reserve (SBI). The Footprint and Gull Island Reserves are located on the southeast and southwest sides of Santa Cruz Island respectively, and the SBI Reserve is located on the south-east corner of Santa Barbara Island.

This petition requests, for the reasons stated in the accompanying sections, that The Footprint, Gull Island, and SBI Reserves be modified and partially opened and converted into limited take conservation areas with implementation of one the following options (listed from the most to least allowances):



Option 1: The least restrictive option, with some existing precedent SCMA's (2nd preferred option):

- The recreational take of pelagic finfish* by hook-and-line and spear is allowed.
- The commercial take of pelagic finfish* by hook-and-line, and swordfish by harpoon is allowed.
- ~~Deep Set Buoy Gear (DSBG) is allowed in the federal portions of the proposed MPAs. **~~

Option 2: Elevated protections in species selectivity (1st preferred option):

- The recreational take of Highly Migratory Species (HMS)* by hook-and-line and spear is allowed.
- The commercial take of Highly Migratory Species (HMS)* by hook-and-line, and swordfish by harpoon is allowed.
- The possession of Coastal Pelagic Species (CPS) is allowed.
- ~~Deep Set Buoy Gear (DSBG) is allowed in the federal portions of the proposed MPAs. **~~

~~Option 3: Option 1 with only allowance of "surface fishing methods:" ***~~

- ~~The recreational take of pelagic finfish* is allowed via surface fishing methods.~~
- ~~The commercial take of pelagic finfish* by hook-and-line via surface fishing methods, and swordfish by harpoon are allowed.~~

~~Option 4: Option 2 with only allowance of "surface fishing methods:"~~

- ~~The recreational take of Highly Migratory Species (HMS)* is allowed via surface fishing methods.~~
- ~~The commercial take of Highly Migratory Species (HMS)* by hook-and-line via surface fishing methods, and swordfish by harpoon are allowed.~~
- ~~The possession of Coastal Pelagic Species (CPS) is allowed.~~

Option 3: Same as option 1 with restriction of "bottom-contact-gears." (4th preferred option)

- The recreational take of pelagic finfish is allowed by hook-and-line and spear, except through the use of bottom-contact-hook-and-line and bottom contact gears, which is restricted.
- The commercial take of pelagic finfish by hook-and-line is allowed, except through the use of bottom-contact-hook-and-line and bottom contact gears, which is restricted.
- The commercial take of swordfish by harpoon is allowed.

Option 4: Same as option 2 with restriction of "bottom-contact-gears." (3rd preferred option)

- The recreational take of highly migratory species is allowed by hook-and-line and spear, except through the use of bottom contact hook-and-line and bottom contact gears, which is restricted.
- The commercial take of highly migratory species by hook-and-line is allowed, except through the use of bottom-contact-hook-and-line and bottom contact gears, which is restricted.
- The commercial take of swordfish by harpoon is allowed.
- The possession of coastal pelagic species is allowed.

Option 5: non-hook-and-line of pelagic finfish (6th preferred option):

- The recreational take of pelagic finfish by spear is allowed.
- The commercial take of swordfish by harpoon is allowed.

Option 6: non-hook-and-line of highly migratory species (5th preferred option):

- The recreational take of highly migratory special by spear is allowed.



- The commercial take of swordfish by harpoon is allowed.

Deep-Set-Buoy-Gear (DSBG):

DSBG, currently being a federal exclusive fishery, would need to be considered inside of these areas through a federal stakeholder process and would ultimately only allow DSBG in the federal water portions of these MPAs. Analysis of allowing DSBG inside of the state water portions of these MPAs will remain pending with the FGC and CDFW until it passes the EFP stage, becoming an official state gear type, and if one of the above options is grated entirely or in-part.

Each of the above options **may** also include a reduced in size, more selective, limited-take or no-take zone within the Gull Island and SBI zones. However, as discussed later, these areas are only needed if Options 1 or 3 are selected (See Attached: Full Analysis Document 1).

*List of State HMS, CPS, and Pelagic finfish per Title 14 CA § 1.49, 1.39, and 632(3):

-Highly migratory species means any of the following: albacore, bluefin, bigeye, and yellowfin tuna (*Thunnus* spp.); skipjack tuna (*Katsuwonus pelamis*); dorado (dolphinfish) (*Coryphaena hippurus*); striped marlin (*Tetrapturus audax*); thresher sharks (common, pelagic, and bigeye) (*Alopias* spp); shortfin mako shark (*Isurus oxyrinchus*); blue shark (*Prionace glauca*); and Pacific swordfish (*Xiphias gladius*).

-Coastal pelagic species means any of the following: northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), jack mackerel (*Trachurus symmetricus*), and market squid (*Loligo opalescens*).

-Pelagic finfish, are a subset of finfish defined as: northern anchovy (*Engraulis mordax*), barracudas (*Sphyraena* spp.), billfishes (family Istiophoridae), dolphinfish (*Coryphaena hippurus*), Pacific herring (*Clupea pallasii*), jack mackerel (*Trachurus symmetricus*), Pacific mackerel (*Scomber japonicus*), salmon (*Oncorhynchus* spp.), Pacific sardine (*Sardinops sagax*), blue shark (*Prionace glauca*), salmon shark (*Lamna ditropis*), shortfin mako shark (*Isurus oxyrinchus*), thresher sharks (*Alopias* spp.), swordfish (*Xiphias gladius*), tunas (family Scombridae) including Pacific bonito (*Sarda chiliensis*), and yellowtail (*Seriola lalandi*).

~~**Deep Set Buoy Gear (DSBG), if allowed, would **only** be allowed beyond the 3nm line, outside of state waters, as is currently fished. Barring any future changes or exempted fishing permits (EFPs).~~

***See Full Analysis Document attachment (Document 1) for detailed description.

4. **Rationale (Required)** - Describe the problem and the reason(s) for the proposed change:

The Problem:

Initially established in 2003 and federally expanded in 2006, the Channel Islands MPA network containing The Footprint, Gull Island, and SBI Reserves was the first network of its kind in California history. This island network later expanded into the statewide MPA network during coastal implementation phases from 2007-2012. The problem created by these first MPAs was the unintentional protection of seasonal pelagic and highly migratory species that migrate into Southern California during the summer months.

The allowance of limited pelagic or highly migratory take in these areas falls in line with the adaptive management measures set forth in the Decadal Management Review (DMR) and reinforced by the Marine Resource Council's (MRC) near-term recommendations. The proposed changes also fall in line with the MPA Master Plan and align with FGC comments on previous change request petitions.

While maintaining the original intentions for the creation of the MPAs, the proposed changes will have minimal impacts on the ecosystem due to the selective nature of the gear being recommended and highly mobile species it would allow for.



Summary of the reasons for change:

This petition aims to prove this proposal is justified by showing the following*:

- Limited take of pelagic finfish or HMS does not significantly affect or interfere with the species and features the MPAs aim to protect
- The proposed changes provide better equality of MPA policy across the state
- The 20 years of data from these and other MPAs support the proposed changes
- The proposed changes are in line with MPA decadal management review (DMR) comprehensive recommendations and the near-term priority recommendations of the marine resource committee (MRC)
- The proposed changes follow precedent set by the FGC's comments on previously submitted petitions, the current MPA overviews, the 2016 MPA master plan for the southern section, and the original 2002 MPA CEQA for the Channel Islands Network
- The proposed changes exclusively allow for sustainable fishing methods on no at risk populations/species
- The proposed changes support sustainable commercial fisheries the state and NOAA have expressed desire to further expand
- The proposed changes are reasonably enforceable (per discussions with F&G officers)
- The proposed changes have mass public support from the public, fishery groups, non-fishery groups, and conservation organizations

If implemented the resulting changes may have the following effects:

- The Channel Islands MPA network would be updated to allow for a more equitable 60/40 no-take to limited take closure ratio, which would be in line with the state's ratio
- Would provide new fishing opportunities to sustainable recreational and commercial fisheries while producing minimal impacts to the intended protected structures and species
- Provide new research opportunities for observing previous no-take zones under new allowance of pelagic or HMS limited-take
- Help grow local business and further develop the local and state economy

*Further detailed explanations, analysis, and figures are included in Document 1, and the remaining documentation in the "Supporting Documentation" section.

SECTION II: Optional Information

5. **Date of Petition:** Submitted-11/22/2023

AMENDED 3/14/2025

6. **Category of Proposed Change**

☒ Sport Fishing

☒ Commercial Fishing

☐ Hunting



☐ Other, please specify: [Click here to enter text.](#)

7. **The proposal is to:** *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*

☒ Amend Title 14 Section(s): Division 1, Subdivision 2, Chapter 11, § 632

☐ Add New Title 14 Section(s):

☐ Repeal Title 14 Section(s):

*See Document 20 for State and Federal Code modifications example

8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition** [Click here to enter text.](#)

Or ☒ Not applicable.

9. **Effective date:** If applicable, identify the desired effective date of the regulation.

If the proposed change requires immediate implementation, explain the nature of the emergency: Due to the change regarding modifying existing MPAs that cover both State and Federal waters, the federal bodies (NOAA, NMS, and PFMC) must mirror the above changes in their portions of the MPAs to allow for reasonable enforcement of these areas. Due to the lack of precedent, this being the first time the FGC is allowing petitions for individual or groups of MPAs to be modified, new channels need to be opened in order to facilitate such changes. A reasonable amount of time for all parties (state, federal, and public) to review and confirm the reasonings and data provided is required. This petition simply requests this change be made as soon as is practical.

10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents:

Document 1: Complete, in-depth analysis of the prescribed changes and key points including weighing out the aforementioned change options, scientific basis, and stock assessment analysis.

Why Change These MPAs?

California's MPA network has provided valuable data for researchers allowing for observations of small-scale ecosystems in their raw form with no human intervention. That being said, all research focuses on the local non-pelagic species in these areas. The reasonings for this will be discussed later in depth but is a result of the massive area pelagic populations cover making their net presence the same everywhere. It is for this reason that if changes are made, the local non-pelagic species will remain unaffected, and still be protected under the proposed changes.

This petition aims to prove that specific limited-take allowances will not significantly interfere with the populations the MPAs aim to protect. This petition requests 3 current MPAs be modified to limited take in order to allow for sufficient numbers of no-take zones to still remain in the Channel Islands Network for research and public non-consumptive use (approximately 60% of the island network will remain no-take zones).

With the proposed change, there lies immense research opportunity in filling gaps in our knowledge. Never has a no-take MPA been converted into a limited-take zone. If there are factors that limited-take of pelagic or HMS does have on the local, non-pelagic populations (currently none are known), this change would allow for a whole new branch of research to take place; observing converted no-take zones after 20 years of historical data.



This petition acknowledges the need for no-take MPAs around the Channel Islands to act as a baseline to research as well as areas for the public to view undisturbed waters, and if implemented approximately 60% of the island network would remain no-take. This would mirror the state average for no-take zones. This petition also acknowledges there is no reason to request for a limited take zone in an area far offshore or often locked by foul weather that would theoretically only be fished a handful of times a year. These areas were selected for the reason that they offer sufficient new opportunities to the fishing community and researchers if the no-take areas are converted into limited-take areas.

A unique fact of these three MPAs, and other MPAs in the Channel Islands network is their expansion beyond state waters, something we see nowhere else in the state. All three of these MPAs are part of this subset of state/federal MPAs, extending 6nm from the islands compared to the traditional 3nm a normal MPA would cover. This means for this specific petition, if changes are made, both State and Federal changes should be mirrored to allow for reasonable enforcement and streamlining of regulations. The Commission and CDFW would likely need to partner with NOAA and the Channel Islands National Marine Sanctuary (CINMS) to make these dual zone changes within each MPA. Therefore, this petition will also be addressing NOAA/CINMS and federal fisheries in addition to the Commission and state, so all agencies are aware of the changes being requested and the supporting factors for this change.

The First California MPAs:

The Channel Islands MPA network was the first set of MPAs in California history. Established in 2003, the state closures were expanded in 2006 into federal waters, completing the Channel Islands MPA network. The first state MPAs off the central coast were then implemented one year later, in 2007, beginning the statewide network. The Channel Islands MPAs had no accompanying southern section coastal MPAs until the southern section's implementation in 2012, which also marked the completion year of the state MPA network and nearly a decade of existence for the Channel Islands MPAs.

Being the first, the Channel Islands Network acted as a baseline, moving the state into previously unexplored territory, that today has grown into the current network. That being said, these first MPA implementations were not perfect. We have learned a lot since their creation, from better understandings of both non-pelagic and pelagic species to new closures ideas that followed in the four coastal MPA regions. Now that we have had more than 20 years to observe how this island network acts, it is time to make fine-tuned adjustments in order to modernize the Channel Island network to better mirror the remaining state network and the latest research.

MPA Intentions - Focus on Local Non-Pelagic Species:

Being the first set of MPAs and covering both state and federal waters, the state partnered with the Channel Islands National Marine Sanctuary (CINMS) and NOAA to develop a plan in order to determine how the Channel Islands MPA network would look. In the end, a two-part CEQA was developed that laid out the MPA plan for the Channel Islands network, in which the broad and specific reasonings for The Footprint, Gull Island, and SBI reserves were discussed (*Docs. 3-5*).

Broadly speaking all three of these Channel Islands MPAs were put into effect either around common invertebrate/fishing grounds or were built off of an existing invertebrate closure (SBI). The CEQA acknowledges that placing MPAs around these zones may have congested fishing efforts elsewhere and may slow fisheries short-term. However long-term, it was the belief that these protected areas would act as a sort of oasis, growing mass populations inside that would expand out as they grow to capacity inside reserves. These populations would then radiate from these areas and would in turn help fisheries over time.



We can see the idea of protecting the local, nearshore species of the Channel Islands very evident in each of the three MPA justifications in the CEQA (*Docs. 3-5*), the 2016 MPA master plan goals (*Doc. 10*), and the published MPA overviews (*Docs. 7-9*).

According to the CEQA, The Footprint was originally established with the primary intention to protect the unique rocky reefs and rebuild the rockfish populations (*Doc. 7*). The CEQA discussed the depleted groundfish stocks at the time and mentioned how they would benefit the most from the MPA's implementation. The Gull Island and SBI reserves also discuss deep water reefs and rockfish, but focus more on endangered bird nesting grounds, abalone populations, and the more diverse, nearshore species along the islands they border (*Docs. 8 and 9*). The broad implication of the MPAs in the CEQA was the intention that local populations of fish, birds, and mammals inside the MPAs would, "respond to protection within the reserve through increased density, individual size, and reproductive potential," (*Docs. 3 and 4*).

This logic is something we see echoed today in the modern MPA overviews of the three MPAs and the goals of the MPA Master Plan (*Doc. 10*). In the MPA overviews under, "Why was this location chosen for a state marine reserve?" we still see reasons such as the protection of canyons, rocky reefs, pinnacles, kelp forests, and rocky nearshore habitats for local non-pelagic species including copper rockfish, sheephead, cowcod, and bocaccio. However, there is zero mention of any pelagic or HMS in these overviews. This point is further reinforced by the southern section MPA master plan, where under its goals, states its intentions revolve around protecting the ecosystems within the MPAs and help rebuild rare or depleted populations of species that are, "more likely to benefit from MPAs," and, "Protect selected species and the habitats on which they depend while allowing some commercial and/or recreational harvest of migratory, highly mobile, or other species; and other activities," (*Doc. 10*). All of these protective goals are catered to the local species of non-pelagic fish, while the pelagic goals clearly state that pelagic and HMS should have limited take areas, something that the Channel Island network severely lacks compared to the rest of the state.

Proposed Changes Effect on the Original MPA Intentions:

As mentioned, the original and current goals of these three MPAs revolve around protecting the local, non-pelagic, and nearshore species within them. The idea of a radiating effect helping fisheries around MPAs does indeed hold merit for local populations of non-pelagic species. Species like groundfish that could in theory live, feed, and spawn all within one MPA are a prime example of this working as intended today. A groundfish that may have lived its entire lifecycle inside of a protected area, will only affect that local protected area if that individual was taken. This is why if implemented, the changes would still protect all invertebrates and non-pelagic species, such as rockfish, leaving the original science backed protections, and MPA intentions, in effect.

In regard to these intentions for pelagic or HMS, limited pelagic or HMS take would not noticeably affect any of the pelagic or HMS populations within our waters. This is the case since pelagic and HMS are either highly mobile or seasonal migrators, moving with currents rather than remaining on structure or in a small MPA zone. It is one thing if an entire or significant population of a species live inside a protected area, but for species that live and move over a vast area, these MPAs are negligible in helping their population. Species that live and feed over massive areas of ocean, and spawn hundreds of miles away from the network are intrinsically less affected by a small area they may or may not pass through each year. Unlike the non-pelagic species covered in the CEQA, Master Plan, and modern overviews, pelagic species' population densities, individual sizes, and reproductive potentials are not meaningfully affected by these MPAs. Populations would essentially remain as affected by human impacts whether this proposal goes into effect or not due to the protected areas covering so little of the area they live in. This is something that was actually touched on in the CEQA, where it is stated, "No-take areas, so long as their size is large relative to the



movement of the species, will lead to increased (species) abundance,” (*Doc. 6*). Essentially, due to pelagics and HMS covering so much area throughout their travels, the impact on a pelagic or highly migratory species being protected inside the existing MPAs is near zero. Therefore, there is no scientific basis to leave protections for these species in effect within these three MPAs.

A prime example is the swordfish, one of the three primary species that would be reasonably targeted inside the MPAs if partially opened. Satellite tag data from the Pflieger Institute of Environmental Research (PIER) (*Doc. 15*) shows tagged swordfish off southern California traveling from the tag location to as far south as Cabo (900 nm), or nearly as far west as Hawaii (1900 nm) to spawn in the winter/spring. They then migrate back to Southern California one year later in the summer to feed. Like the swordfish, other HMS such as marlin or tuna are also examples of species that travel massive distances every year during their migrations. These species cover so much water that the net environmental impact from small areas like these MPAs is near zero. It is for this reason the petition requests that pelagic or highly migratory species are able to be targeted inside of these three areas.

Following MPA Reports, The Need for Adaptive Management:

In January 2023 the DMR of the State’s MPA network was published and contained comprehensive recommendations including the following considerations:

- “Allow take of migratory and pelagic species in MPAs that currently do not allow it” and
- “Return MPA fishing opportunities, especially in legacy fishing areas that were previously open to fishing.” (*Doc. 12*)

The Footprint, Gull Island, and SBI Reserves fall under legacy pelagic fishing areas, being once completely open. In alignment with the DMR, these legacy areas can be justifiably re-opened to the limited take of pelagic or HMS per the recommendations.

This change is also supported by the recommendation of the Marine Resource Committee (MRC), as outlined in the networks near-term priorities from the DMR. Stating we must, “Apply what is learned from the first Decadal Management Review to support proposed changes to the MPA Network and Management Program.” We have had ample time to observe these MPAs over their two-decade existence, now that we better understand the low impacts pelagic and HMS have on the network, we can justifiably adaptively manage these MPAs, opening them to limited take. In addition to the DMR and MRC recommendations the 2016 MPA master plan directly called for limited take areas of pelagic or HMS. Due to these three MPAs being the among the oldest modern MPAs, existing since 2003, it is possible the Master Plan considerations from 2016 were not as refined in 2003. This is something we can now remedy, by modifying these MPAs to modern network outlooks.

In addition to adaptive management measures there also exists a pre-DMR precedent from the FGC stating that the MPA network is not designed for pelagic or HMS. In 2020 the FGC denied a petition calling for creating a sanctuary/MPA for Great White Sharks near Carpinteria on the grounds that MPAs are intended, “[...] not (to protect) individual species, **especially highly mobile, pelagic species**,” (*Doc. 11*). Following the FGC’s reason for rejection, this argument can be applied to support the case for the allowance of pelagic or HMS take within the listed reserves, because these species, per their pelagic/highly migratory designation, fall into this category.

Pursuing Equitable Policy Through Modernized SMCAs:

The MPA Network was founded on four key pillars with the innovative idea that these pillars would allow for the adaptive management of the system. One of these pillars is policy and permitting which calls for consistent policy across the network to allow for fair network governance.

After the Channel Islands MPAs were established, the remaining network followed. Comparing



the Channel Islands network to the remaining state network we see large shifts toward the partial-take state marine conservation areas (SMCAs) and less overall water coverage.

The Channel Islands network of MPAs covers 21% (318 mi²) of the total sanctuary waters. Compared to the 16% of state waters currently protected under the network, this means there is a 31% increase in protected areas around the Channel Islands than the rest of the state.

Not only is there an increased area of closures (by percentage) within the Channel Islands network, but also, significantly less relative area open to limited-take. Of the 13 various closures around the island network all but 2 are no-take sections. This only accounts for only 11.43 square miles of water of the 318 square mile closure area, or 3.59% of the sanctuary's closures. By comparison, the state network contains about 40% limited take areas. This is a wide discrepancy between the Channel Islands network and the state network (Over 10 times the relative area around the Channel Islands is no take compared to the rest of the state). If implemented, the percent area of limited take in the Channel Islands Network would roughly mirror the State's 40% limited take figure, bringing more equity to the local region. The raw figures are shown in the table below.

Table 1: Comparison of MPA (no-take) and SMCA (limited take) of the Channel Islands MPAs vs the Entire State MPA Network		
	Channel Islands MPA Network (State and Federal Waters)	State MPA Network
% of Waters Protected (no-take and limited take)	21% (~318 mi ²)	16%
% of network that is No-Take	96.41% (~306.58 mi ²)	60%
% of network that is limited take	3.59% (~11.41 mi ²)	40%
% of network that would be limited take if changes implemented*	41.17% (~130.93 mi ²)	<40%

*This assumes the optional “nearshore” closures are not implemented and includes the Channel Islands network in the state network figures.

The goal of these changes is to allow for enough reasonable take of pelagic or HMS at comparable levels of opportunity zones to the rest of the MPA network (~40% partial take allowance). If implemented, the Channel Islands network would still have elevated protected area rates, 21% compared to the state average of 16%, but would provide a better ratio of limited take areas.

Current examples of limited take areas outside of the island network in Southern California include SMCAs such as the Pt. Dume, Abalone Cove, Blue Cavern, and Farnsworth SMCAs (Doc. 17), which allow for some form of pelagic finfish take. Other statewide examples of limited take SMCAs outside Southern California cater to pelagic finfish and salmon, technically not a pelagic finfish by biological definition, but a species that still covers mass distances every year. This petition simply requests that we adapt too and update the Channel Islands network to the same standards we see in the rest of California.

Enforcement Analysis:

On the surface, the opening of limited take for pelagic or HMS in these current no-take MPAs could create additional enforcement issues for F&G Wardens covering these areas. However, upon talking to the warden office and local wildlife officers it was determined this was not the case. It is the intention of this petition that the changes made would be enforced similarly to how current pelagic



allowed SMCA's are enforced. For the local Ventura agency, enforcement would be identical to how officers enforce the Anacapa Island SMCA.

Discussions with the enforcement agency have indicated that there are currently no issues with enforcement in the current pelagic allowed SMCAs. It is their standpoint that the current enforcement regulations are clear and allow officers to make decisions swiftly and appropriately. The current regulation that outlines enforcement of the SMCAs is under California Code of Regulations Title 14 Section 632(a)(1)(C) (*Doc. 18*). To summarize the code, take or possession of species except specific individuals or groups listed is prohibited. Meaning, under the proposed regulations, the take and possession of pelagic or HMS would be allowed within the conservation area, but the take and possession of non-pelagic or non-HMS species, like groundfish, would be not allowed. There is an added exception that only possession of coastal pelagic species (CPS) would be allowed if an HMS specific option is selected (it is preferred one is). The reasoning for this addition is the allowance for such HMS targeting vessels to possess baitfish that is commonly used to target such species. Due to the clear-cut boundaries of enforcement regulations, and the input from F&G wardens, it was determined that the additional enforcement required by these changes is both minimal and overlaps with current pelagic allowed SMCAs they currently patrol and enforce. In addition, since petition submittal the new GEAs follow a very similar structure to the goals of this petition, and if offshore reefs can be designated GEAs and enforced there is little to no reason why limited take allowances to these MPAs could not be.

Mass Public Support:

The origins of the pelagic allowed zones go back to the original implementation of the Channel Islands MPA network which includes 2 areas for pelagic take. However, the waters these two zones cover are located on the northern side of Anacapa and Santa Cruz islands, areas where very little pelagic/HMS fishing takes place. HMS fishing method trial maps for DSBG and deep drop show a clear picture of the primary pelagic/HMS grounds in southern California (*Doc. 16*). The maps clearly display most pelagic and HMS fishing occurs on the southern sides of the four northern islands. Almost no fishing efforts are made in the two northern zones. Primarily, most pelagic and HMS targeting fishing around the Channel Islands occurs 2-12 miles south of the northern islands, down the entire 4 island chain. All three of the requested MPA lie in these areas.

Fisheries that actively target or have targeted pelagic or HMS off the northern Channel Islands have wanted these types of changes since the implementation of the network and have commented both in the past and present about the desire to allow for more pelagic or HMS limited take. Comments from 2002 in the CEQA and from 2023 DMR show this desire. However, back in 2002, we did not know nearly as much about the pelagic or HMS migrations and what impacts allowing a small fishery inside these areas could be. Today this is simply not the case. We now know that this change, if implemented, will further streamline current regulations concerning pelagic or HMS, while having a net minimal impact on the local ecosystems inside these MPAs. This petition has the official backing and support of several fishery businesses, groups, and individuals, *Doc. 2 for list and letter*, and also includes a publicly signable petition containing over ~~880~~ 1000 signatures at the time of submittal.

Included Stakeholder feedback and additional information (added January 2025)

Commercial Swordfish:

A large conflict that comes up with the three mentioned Channel Islands MPAs and the commercial swordfish fishery is the 3 MPA's current no-take allowance, which includes the retrieval of legally taken fish.



The harpoon swordfish fishery takes a swordfish by locating a basking fish on the surface and attempting to hit it with a hand thrust harpoon. Once hit, fish are left to tire on a set of gear marked with a flag, if not immediately retrievable. This soak time varies greatly, from 1-8 hours, but it is typically no longer than 2 or 3 hours. In that time, fish could pull gear several miles, 1-5 on average in my experience participating in the fishery. This movement occasionally brings gear into an MPA before being retrievable. Even if fish are taken miles away, there is still a random chance the legally taken fish on harpoon gear ends up inside the closure come retrieval time. There is nothing we can do to stop a swordfish from swimming where it wants to go while on gear.

Similarly, DSBG sets 10 flags with 10 hooks at 1000ft in open waters for swordfish. Swordfish hooked with this method can move gear similarly to harpoon fish in terms of distance. This is because if a hooked fish does not come to the boat immediately, the gear is placed back in the water to let the fish tire and to monitor the remaining set, leaving legally hooked fish the possibility to move into a closure as well.

Both of these problems are more prevalent around the Channel Islands and the three MPAs mentioned in 2023-15MPA because these MPAs extend an additional 3nm offshore into federal waters, overlapping more with the more offshore swordfish-fishery grounds. Today, retrieving a dead harpoon fish or fighting/retrieving a hooked fish inside these no-take closures is illegal, something that should be resolved some way. This is especially the case for harpoon fish, as unlike DSBG fish that could be cutoff or released with a tag, harpoon fish cannot be let go once hit.

This problem is compounded in the commercial swordfish fishery due to the fishery's reliance on calm waters to eyeball or locate a basking swordfish. Of the northern Channel Islands one MPAs in particular, The Footprint, sits in the lee of the islands, the place where the islands act as a physical weather barrier from the normal westerly wind and swell. This calm section was historically important and remains an essential area to the swordfish fishery more than other fisheries because of its reliance on spotting vs hooking a fish. These weather pockets force the fishery to operate in the lee area regardless of the MPA's presence. The result is a higher effort around the MPA, not because there is any more swordfish there than other places, but because that is the only zone that has fishable conditions most days at the Northern Channel Islands. This closer proximity to the MPA due to weather leads to higher chances of interactions where legally taken fish tow gear into the closures as mentioned above. We can see this higher landing rate and therefore higher chance of interactions by observing commercial block catch data showing the blocks containing and surrounding the Footprint, blocks 707 and 708 are especially productive due to the calmer waters. These two blocks alone captured 2.82% of state swordfish landings, locally comprising 15.63% of the swordfish produced by the Santa Barbara Port Area over the last 18 years (MFDE¹), particularly high values for an HMS.

It is understandable that opening these MPAs simply on the idea that the weather is better than other zones is not a valid reason on its own, but that is not the point. The point is that this calm zone, and the higher effort inside of it, results in higher chances of gear unintentionally moving into the closure. This unique combination of factors gives even more reason to resolve this problem now during this adaptive management process.

As a result, the FGC, CDFW, PFMC, and CINMS should take this interaction into account in order to better consider the individual actions for allowing the harpoon and DSBG fishery access to operate in or, at the very least retrieve, legally taken swordfish within the 3 requested MPAs because of this gear movement problem.

1. MFDE under only swordfish landings from 1/1/2008 to 12/31/2023. The Santa Barbara Port Area was used for the local filters to include Ports around the Channel Islands (petition's area of concern).

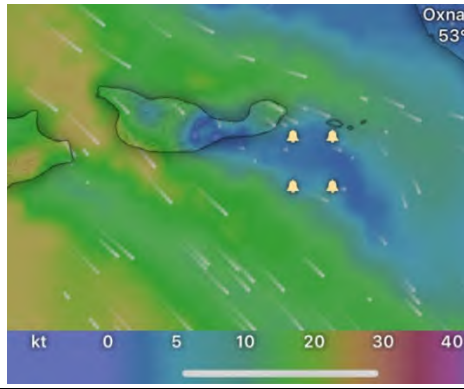


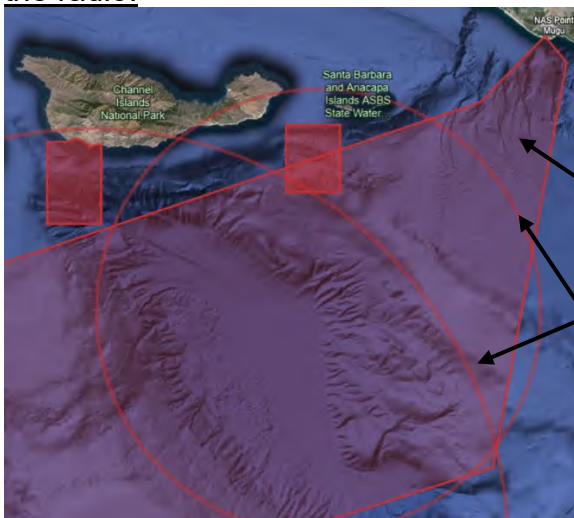
Image depicting average day in the Northern Channel Islands with The Footprint MPA outlined. Displayed wind “lee” for commercial swordfish is predominately around the closure forcing effort and gear interactions with the MPA to be higher (conditions are “fishable” under 10kts, blue color). Wind model used in the NOAA HRRR model mid-day (12:00) during peak effort time.

Local Naval Closures:

From my talks with general HMS fishermen at as many talks as I could attend locally, the issue of military operations off the southern side of the 4 northern Channel Islands was brought up enough time to look into and warrant discussion. The primary argument brought up is, while HMS cover large areas and are fishable outside of the MPAs, military operations close off most and sometimes all fishable area for HMS around the Channel Islands around the northern Channel Islands for local fleets except small areas largely taken up by the two existing MPAs, The Footprint and Gull Island.

While on the water targeting HMS, I have removed from and forced into a different area where no or less HMS are realistically present (more inshore, into foul weather, or into an MPA). There are two types of naval closures on the southern side of the Channel Islands, total range closures and radius closures. Some days one or the other is active and some days both are active depending on the exercise. The location of closure radiuses from operations does vary, but the missile range closure is constant polygon. This zone covers a large area of offshore waters on the southern side of the islands, where HMS effort locally occurs. Included is an image of the points provided to me by the Naval Warfare Center Pt. Mugu depicting the range closure when they are in a live fire event, shaded in light red. The hollow circles depict radius closures from boat coordinates and restricted distances from said positions are enforced by aircraft. Note, a 1.5 nm corridor from land was still permitted for basic transit, so closures did not go all the way to the island shore. The Footprint and Gull Island MPAs have also been included depicting which areas fall inside and outside the missile range.

Event frequency does vary from 0 to 6 days a week, and closure radiuses from boats change based on the activity and number of vessels participating. Currently the only way of acquiring event data is with direct talks with Naval officers <24hr before an event, and in some cases the day of on the radio.



Naval closures at the Northern Channel Islands overlaid with The Footprint and Gull Island MPAs.

The Point Mugu Naval Missile Range closure is the entire light red shaded area.

The two circles are closed radii from vessels operating in the same area, radii closures did leave a 1.5 nm corridor open from the island.



Adaptive Management, the MLPA, and the Master Plans (addition):

Adaptive Management: It should be noted that the adaptive management of the MPA Network is not a one-way street. Adaptive management is defined by Fish and Game Code section 2852(a)² as, “a management policy that seeks to improve management of biological resources, particularly in areas of scientific uncertainty, by viewing program actions as tools for learning...” It is a practice where, as conditions change or we learn more about something, in this case the MPA network, we actively amend management regulations to reflect what currently is known to be a reasonable management method. That being said, consistently increasing protected areas or the level of protection for all species in an area every management cycle is not the only direction this process is allowed to go in order to manage the network. If sufficient evidence is provided and goals can still be met, adaptive management can certainly be used to decrease restrictions in cases where we still accomplish the same goals, something Petition2023-15MPA claims is possible due to the lack of or how little pelagic/HMS interactions are with MPA goals, as supported by the Master Plans. If we can still accomplish the stated goals of the network in these specific MPAs while allowing some take of HMS or pelagic species, the network can certainly still be considered improved as a result. The latest example of adaptive management lowering regulation was the repealing of the Cowcod Conservation Areas (CCAs) and implementation of the smaller Groundfish Exclusion Areas (GEAs) after the cowcod population was considered rebuilt and healthy.

The MLPA: The goals of the MLPA and accompanying plans are clear. The largest goal being to preserve local ecosystems, allowing them to grow undisturbed as much as possible by people, resulting in higher levels in local species’ abundance and biodiversity for future generations to observe. From the onset of this petition, it has been a foundational idea that allowing take of pelagic or HMS inside these areas will both, not significantly affect local species abundance or populations, as they would still be protected, and that the HMS populations would not be significantly affected by such a change. The argument of lowering protections in a petition like this is understood at face value, but the goal of the petition is to examine if we can accomplish the same or a satisfactory level of the stated goals under these “lower protections.”

MPA Master Plans: Appendix G of the 2008 Master Plan³ discusses the idea of species affected by MPAs, mentioning pelagic and HMS groups are overall less affected. Additionally, as the original petition mentions, the current 2016 MPA Master Plan for the southern section outlines within its goals⁴ that areas of protection providing limited pelagic take or HMS take be provided. This is something we do not see around the Channel Islands in nearly comparable amounts to the rest of the state network, this effect is worsened by the federal expansions at the Channel Islands encroaching more into offshore waters where more pelagic fishing occurs. Previous FGC MPA discussions provided additional input on MPAs and HMS interactions where the commission stated that MPAs are intended to protect (local) ecosystems, not individual species, especially those that are highly mobile or pelagic⁵. Both FGC comments, and statements from the 2008 and 2016 Master Plans support the idea that pelagic finfish and HMS are both not as affected by these MPAs and that areas allowing take of just pelagic finfish or HMS be included in the network.

2. https://leginfo.ca.gov/faces/codes_displaySection.xhtml?lawCode=FGC§ionNum=2852.

3. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=113013&inline#:~:text=Species%20with%20a%20strong%20tendency,their%20entire%20range%20of%20movement>.

4. <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=112492&inline> (pg. F-5 (Goal 2, specifically point 4))

5. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=207757&inline> (pg. 9)



All of the above evidence and precedent came to light after the establishment of the Channel Islands network in 2002, so it is somewhat understandable why the decisions were made back then to leave these areas as no-take zones, we simply did not know as much then as we do now. However, 20 years later with all of this modern evidence and precedent elsewhere along the coast in the 40% of the more-modern coastal network that is limited take, I believe it is more than justifiable to re-evaluate the Channel Islands Network to our current scientific understanding for pelagic/HMS allowed areas in MPAs.

Kelp Restoration and Climate Resiliency:

A final comment of concerns mentions granting limited take access to these areas for Pelagic finfish or HMS will negatively impact local species such as groundfish or those important to kelp restoration and therefore climate resiliency, including but not limited to sheephead and spiny lobster.

The preferred option of only allowing take of HMS was preferred with species interactions specifically in mind. The more selective list of HMS avoids pelagic finfish species, like yellowtail, that could be targeted with methods that are more likely to interfere with non-pelagic species (weighted, bottom contact dropper loops). HMS effort for tuna or billfish consists primarily of surface casting a jig/bait, trolling baits on the surface, or fishing in the middle of the water column. It is very unlikely those targeting HMS species this way will have many interactions with non-pelagic species such as groundfish. Additionally, pelagic or HMS fishing is done primarily offshore, away from nearshore kelp ecosystems, and away from nearshore areas spiny lobster and sheephead frequent.

The four Options Breakdown including Stock and Fishery Analysis:

This section will discuss the impact the allowed fisheries may have on the species that would primarily be targeted, the pros and cons of the ~~four~~ options, and the possible nearshore closure(s). The discussions on the ~~four~~ options and optional no take zones are meant to provide the thoughts and opinions of pelagic and HMS fishery groups and individuals for the Commission to better understand their viewpoints.

-Pelagic and HMS Stock and Fishery Analysis: Out of all of the HMS, Bluefin tuna migrate the furthest in terms of net geographical distance traveled in their lifetime, with individuals who reach maturity traveling from the coast of California across the pacific to Japan, moving up to 70 miles per day during said migration. Billfish (Swordfish or Marlin) travel in two more distinct groups, rotating from California either toward the mid-pacific and Hawaii or off the coast of Mexico, moving up to 35 miles per day according to tag data. All these species and the other pelagic and HMS affected by this change follow migrations similar these, coming into waters off of California in the early summer (June-July), and mostly departing by early winter (November-December). This migration timeline and fishing attempts toward HMS in California are directly related, meaning most, if not all, fishing will be during these 5-7 months, leaving waters relatively untouched the remaining months of each year.

The fishery impact from these changes would be minimal to the overall take of HMS and their stocks. It is the primary intention of this petition that the species primarily targeted inside of these areas (if HMS or pelagic fishing is allowed), would be swordfish, bluefin tuna, and striped marlin. While some other attempts toward more exotic species such as yellowfin or dorado may occur, it would be rarely available.

Fishery efforts in these MPAs also needs to be considered. Pelagic and HMS do not remain in small areas, rather moving with the water and currents. HMS fishery efforts would not be concentrated inside of these proposed limited-take areas, but rather flow through them as the water these species follow flows through these areas. The fishery would cover the same grounds it does



today, with the changes allowing targeting though these areas compared to having to work around them as these species move through them. The two most targeted species in these areas that would be retained are bluefin tuna and swordfish. Striped marlin would likely be targeted the most in terms of fishing effort, but almost all marlin captures are recreational and result in a release.

According to NOAA the bluefin tuna population is not subject to overfishing and stock assessments show the population has “significantly increased,” (*Doc. 13*). If any of the listed options is accepted, all recreational methods of take would be available for bluefin tuna. A majority of this would be hook-and-line, with spearfishing taking up the remaining numbers. Commercially, only hook-and-line bluefin would be permitted as spearfishing is not a commercial option. A concern that was raised was the allowance of commercial hook-and-line bluefin take within these areas. Some groups believed allowing commercial take would prove to have too much of an impact on the stock. However, observing NOAA commercial landing data we see that California’s commercial fishermen only account for 2% of the yearly pacific bluefin that is commercially harvested, meaning the local commercial fishery has a minimal impact on the stock (*Doc. 13*).

The stock numbers and movements are similar for swordfish as well. NOAA lists the pacific swordfish stock is at safe levels and not subject to overfishing (*Doc. 14*). The total local impact by California vessels is listed as minimal with a “significant majority” of swordfish landed by Hawaii based longline vessels. Commercially, with the phasing out of the drift gillnet (DGN), both the state and federal agencies have made it readily apparent they are trying to find new ways to better target and expand commercial swordfish in California. All three of these current MPAs lie in the middle of some of the only reliably fishable swordfish grounds in the Channel Islands. All sit downwind of islands that block the wind and provide fair weather for fishing to occur on days fishing elsewhere is not possible under current allowed commercial methods (Harpoon and DSBG). This is especially the case for harpoon swordfish, a fishery that requires flat-calm water. The allowance for partial take of swordfish inside these regions would allow for a larger calm area to be covered and fished for migrating swordfish.

Unlike bluefin, depending on the accepted option, certain allowances for swordfish take would be made, but some may still be restricted. Options 1 and 2, if either are accepted, would allow all recreational methods for take of swordfish. Historically, this has almost exclusively been surface baiting basking swordfish, a fishery with zero deep water impacts, and has near zero impacts on anything in that area except for the swordfish it targets. Recently however, anglers have begun to mirror commercial methods, and have begun placing baited hooks at deeper depths (~900-1000 ft) for swordfish. Under current regulation, this method of “deep dropping” has no difference/distinction between hook-and-line fishing and would therefore be allowed.

For commercial methods of take, harpoon swordfish would be allowed under any accepted option. This globally recognized sustainable fishery with zero bycatch, is a fishery perfectly suited to have as little impact as possible on the local, non-pelagic ecosystems when a fish is taken. However, like the recreational hook-and-line case, the allowance of commercial hook-and-line for pelagic or HMS inside these regions would allow commercial deep drop of swordfish.

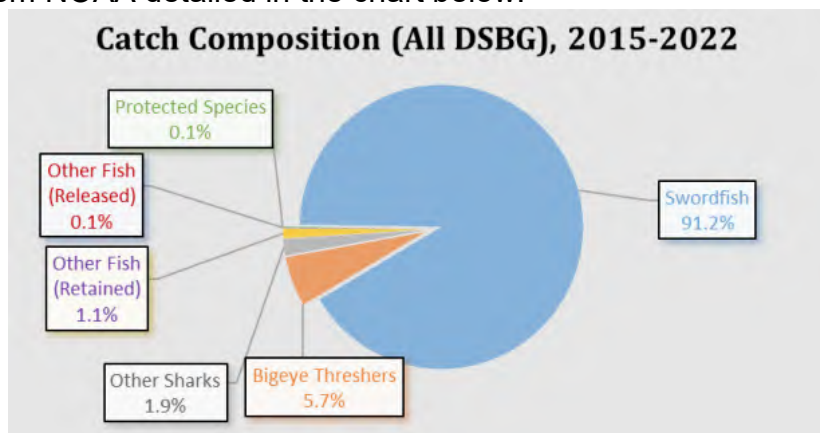
Along with deep drop methods, and in the spirit of fairness to the commercial fleets, ~~Options 1 and 2 would also allow~~ the use of standard-deep-set-buoy-gear (DSBG) ~~in the federal waters only of the proposed limited take areas (as it is currently primarily fished)~~ is proposed in this petition as an isolated action item (see amendment cover letter and revised options). DSBG is currently a federally exclusive fishery, with the exception of one exempted fishing permit (EFP). DSBG is a method consisting of ten separate flags and buoys with one line and one hook on each flag/buoy and is a modern sustainable fishery for swordfish. Due to the nature of these areas overlapping federal waters containing a harpoon allowance (state and federal), the argument for federal authorization of DSBG in these areas is being requested if hook-and-line deep drop is allowed. As previously mentioned, this



change, along with other federal water changes would assumably be made by NOAA and the CINMS working with the state.

These methods of targeting swordfish at depth do have more impact than recreational surface baiting or commercial harpooning. However, the impact of these methods and their bycatch is minimal on non-HMS or pelagic species. This type of fishing has been praised by conservation organizations like Oceana and PEW for its high selectivity and extremely low bycatch (*Links 5/6*). There is also over 10 years of historical catch data for DSBG, the method that hook-and-line deep drop branched from, and 7 years of data from NOAA detailed in the chart below.

Looking at the data we can see that from 2015-2022, DSBG captured 91.2% swordfish, and a 96.9% mix of swordfish and thresher shark (another HMS). Of the “other sharks” and “other fish” most of these species were a mix of other pelagics (i.e., mako sharks, opah, and escolar). This means that nearly 99.8% of all species caught with DSBG are HMS. Almost no non-pelagic or non-HMS species have been landed under this type



of fishery, due to its extreme selectivity. In the small number of cases where non-HMS species were hooked, the active tending of this gear allows for most bycatch to be released alive and well. Since deep drop methods mirror DSBG it is reasonable to assume their catch rates would mirror DSBG rates as well. It is for this reason that deep drop and federal authorization of DSBG for swordfish were listed allowances under Options 1 and 2, since they produce the lowest bycatch numbers, but produce the higher success rates for swordfish catch compared to harpoon or surface baiting.

~~If Options 1 and 2 are rejected but Option 3 or 4 are accepted, all HMS or pelagic targeting methods would still be allowed except those going deep to primarily target swordfish. These options call for the use of only “surface fishing methods,” a term used to describe all non-deep drop methods. This includes methods such as trolling, live bait casting, lure casting, live bait drifting (on the surface), and all other methods anglers or commercial fishermen use besides deep dropping or DSBG.~~

-The ~~four~~ Options and Their Reasonings: Each of the ~~four~~ options is designed to have a minimal impact on the protected area’s local ecosystem but vary in both allowed species and allowed gear types. There are ~~really two~~ several sets of choices, when we break down the ~~four~~ options. The first choice allows either pelagic finfish take and possession, or HMS take and possession with possession of coastal pelagic species (CPS). The logic behind allowing pelagic finfish is primarily the precedent already set on other SMCAs. Pelagic finfish cover the 3 species that would primarily be targeted (swordfish, bluefin tuna, and striped marlin), cover other pelagic species that would occasionally be targeted, and have existing SMCAs elsewhere that already allow for this subset of species. However, this list also covers more species than the HMS list, and as will be discussed, these extra species may pose undesirable issues if limited-take implementations are not made properly. The logic behind allowing HMS take and possession, and CPS possession is that the three targeted species also fall under this more selective classification of species. Meaning there would be a more selective list of species allowed to be taken, thus less overall impact on what could be done inside these areas. Allowing only HMS limited take would also avoid the possible pelagic finfish issues discussed below. The reasoning for the CPS allowance is it would allow common baitfish used to fish HMS to still be retained inside of these areas.



The second choice is the allowance of all hook-and-line methods, restricting “bottom-contact-gears” for better groundfish/bycatch avoidance, or not allowing any hook-and-line gears, just allowing spearfishing and harpoon methods. This is a tiered choice increases in selectivity of gears. Non-restricted hook-and-line of pelagic finfish or HMS of course would give the most access, restricting of bottom-contact-gears is the middle ground which mirrors federal GEAs, and the most selective is the removal of all hook-and-line for just spear and harpoon fishing. Any of these selections can be paired to a pelagic finfish or HMS allowance, making up the 6 total options. ~~including deep drop, and DSBG, or only allowing “surface fishing methods.” The logic with allowing deep drop and federal DSBG allowance is the data shows that these methods are extremely selective and prove effective in targeting primarily swordfish at depth. This choice would allow for more area of opportunity to selectively target swordfish, something the State, NOAA, and PFMG has made very apparent they want to help accomplish, especially commercially with the end of the gillnet dropping landings of California swordfish. The logic with allowing “surface fishing methods” is an attempt at regulating out the deep dropping methods inside of these zones if the State deems them too impactful to allow. If this choice is made, it would make the limited take areas more selective to swordfish methods only, leaving surface baiting recreationally and harpooning commercially as the only allowed methods to target swordfish. If this option is selected, the state would have to clearly define “deep dropping” (to not allow it) or define “surface fishing methods” (to only allow those).~~

In addition to the ~~four~~ main options, there exists the isolated action for DSBG and a final choice of adding a nearshore closure to the Gull Island and SBI zones with more selective or no fishing methods being allowed. The selected limited take option would then be implemented outside of this boundary throughout the remaining “offshore” area. The logic behind this choice has several factors, some of which are the existence of a nearshore/offshore pair in the Farnsworth and Point Buchon SMCAs, and the desire to continue having stricter limited-take or no-take regions closer to the more diverse shorelines. These nearshore regions rarely contain any species this petition intends on anglers targeting, meaning whether or not a nearshore zone is implemented, areas this close to the respective islands would have such a low fishery presence that they would effectively remain untouched, with one key exception.

If an option allowing the hook-and-line take of pelagic finfish is made it is recommended that the nearshore region be implemented. This is due to the fact that limited-take of pelagic finfish by hook-and-line would allow certain game fish species to be targeted in the local, nearshore ecosystems on fishing beds. The intent of this petition is to protect from this type of fishing allowance, intending limited take allowance for these regions to be open water fishing of pelagic or highly migratory species during their movements. This possibility of nearshore bed fishing is only the case for two species on the pelagic finfish list, yellowtail and barracudas. These are species that if pelagic finfish were allowed with no nearshore zone implemented, would definitely be targeted within the nearshore areas of the SBI and Gull Island closures. Again, it is the intention of this petition to only allow for offshore take of pelagic or highly migratory species, primarily billfish and tuna. Allowing pelagic finfish with no nearshore region that accounts for bed fishing of pelagic species such as yellowtail may interfere with the local ecosystem we still aim to protect. If the below listed coordinates are the border for the nearshore regions (table 2), the water outside of these areas at Gull Island and SBI is reasonably deep enough to ensure little to no effort would be made to target these species and would yield almost zero results.

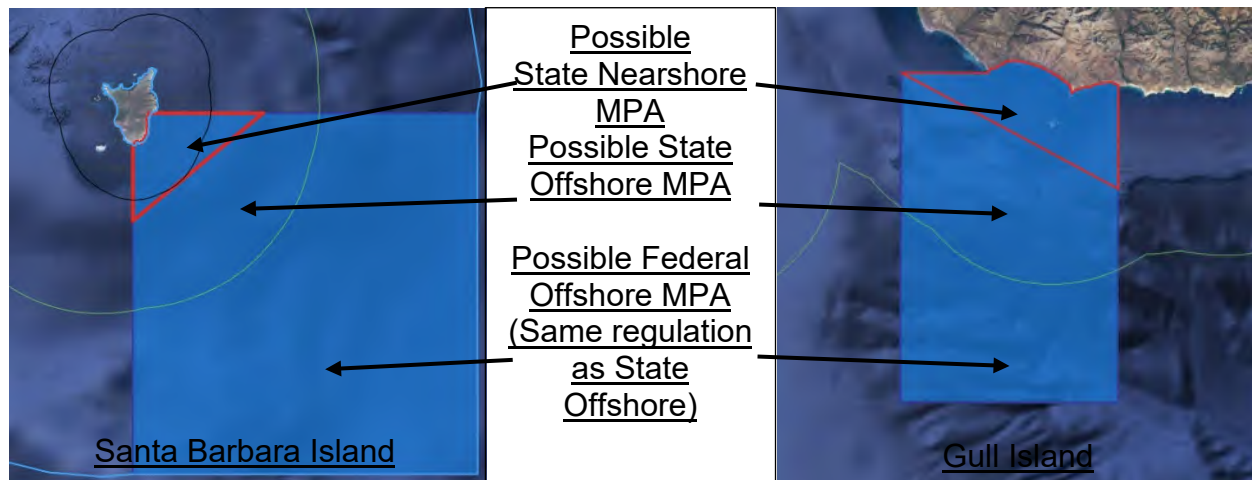


Table 2: Proposed Coordinates and options for the Nearshore limited or no take areas for Gull Island and Santa Barbara Island

Gull Island Nearshore MPA	Santa Barbara Island Nearshore MPA
33° 58.000' N. lat. 119° 53.000' W. long, and 33° 55.800' N. lat. 119° 48.000' W. long Regulation within nearshore area: Recreational and commercial take of (pelagic finfish or HMS, depending on the state's choice) is allowed via surface casting, kite fishing, and surface trolling. The commercial take of swordfish by harpoon is allowed. (preferred) Or A no take region (not preferred)	The 1nm boundary of SBI within the current MPA Regulation within nearshore area: Recreational and commercial take of (pelagic finfish or HMS, depending on the state's choice) is allowed via surface casting, kite fishing, and surface trolling. The commercial take of swordfish by harpoon is allowed. (preferred) Or A no take region (not preferred)

Table 2: Proposed Coordinates and options for the Nearshore limited or no take areas for Gull Island and Santa Barbara Island (Amended)

Gull Island Nearshore MPA	Santa Barbara Island Nearshore MPA
<u>The nearshore-offshore boarder would be bound by a straight line running from 33° 58.000' N. lat. 119° 53.000' W. long, to 33° 55.800' N. lat. 119° 48.000' W. long, within the existing MPA. Regulation within nearshore area:</u> <u>The recreational take of (either Pelagic Finfish or Highly Migratory Species (option dependent)) by spearfishing is allowed.</u> <u>The commercial take of swordfish by harpoon is allowed.</u> <u>The possession of Coastal Pelagic Species is allowed*. (*Only needed if HMS option is selected)</u> <u>(Preferred Choice)</u> <u>Or</u> <u>A no-take region (not preferred)</u>	<u>The nearshore-offshore boarder would be bound by a straight line running from 33° 28.500' N. -118° 59.300' W. to 33° 26.500' N. -119° 02.200' W within the existing MPA. Regulation within nearshore area:</u> <u>The recreational take of (either Pelagic Finfish or Highly Migratory Species (option dependent)) by spearfishing is allowed.</u> <u>The commercial take of swordfish by harpoon is allowed.</u> <u>The possession of Coastal Pelagic Species is allowed*. (*Only needed if HMS option is selected)</u> <u>(Preferred Choice)</u> <u>Or</u> <u>A no-take region (not preferred)</u>



The listed coordinates for the nearshore closures are only the listed coordinates for the dividing line between the proposed nearshore area and the offshore limited take SMCA and FMCA. The collective closure borders of the nearshore and offshore areas would be the same area as the current MPAs. If these are placed in effect along with the selected option applied outside, these nearshore regions would cover sufficient area to prevent nearshore bed-fishing efforts. While possible changes to these borders may be made, it is the fisheries' belief they are sufficient in preventing what would otherwise be a problem if an unrestricted pelagic finfish option is accepted. Further consultations with active fishery members should be made if these borders are desired to be modified. The preference for stricter limited-take rather than no-take is simply that these areas would contain so little presence of these species, that they would effectively be fully protected, but have rare opportunity for the selective allowed methods in them. In addition, as the preferred nearshore allowed methods mirror those in options 5 and 6, these nearshore areas are only needed if a hook-and-line option (1-4) is granted.

The Most Requested Option and Closing Remarks:

It is this petition's preference that in order to avoid the nearshore pelagic finfish risk all together, one of the ~~two~~ three HMS allowance options be selected (Options 2, 4, or 6) with the nearshore zone not selected. Option 2 is the preferred selection since this option allows for the most HMS opportunity, recreationally and commercially, while still remaining extremely selective, and leaving a minimal impact on the local, non-pelagic ecosystems. Option 2, with no accompanying nearshore zones would allow for HMS targeting within the entire area. In the unlikely case HMS are present nearshore, they may still be targeted with minimal local impact as they move through an area under the same selective fishing methods allowed elsewhere. The lack of nearshore zones in this case would also allow for easier enforcement of the area by wardens not having to worry about different zones within an area. If a nearshore region is desired, the more selective limited-take option is preferred. This change would still allow for selective enough take of HMS and prevent any bottom fishing activity nearshore.

In terms of the three MPAs, all three MPAs would preferably be converted to limited take areas. Discussions with those involved in the possible affected fisheries revealed a strong preference for The Footprint to be converted to limited take, with Gull Island and SBI having equal amounts of preference to be opened to limited take.

In closing this analysis, special thanks to all the individuals who provided the input and data to make this petition possible. I would especially like to thank the FGC and its staff for their assistance with and the creation of this adaptive management process.



Remaining Supporting Documents and Sources:

Document 2: Supporters letter for the petition. Summarizes the petition, its reasonings, and its intentions. Was sent out to business and individuals that could be impacted by this change or provide scientific input asking for their support of the petition and its rationale (signature list on the letter).



CHANNEL COAST MARINE





Dear FGC,

On behalf of the hundreds of thousands of anglers that frequent Southern California, and all of the businesses they support, the following organizations and individuals extend their special support and ask for your approval of this petition. This petition would allow for the limited recreational and commercial take of Pelagic Finfish or Highly Migratory Species (HMS) via select, sustainable fishing methods. The changes would apply to the following Marine Protected Areas (MPAs):

- The Footprint Marine Reserve
- Gull Island Marine Reserve
- The Santa Barbara Island Marine Reserve

This proposed regulation modification aims to return extremely selective take opportunities that the original MPA network implementation unintentionally removed. These regions would become state and federal marine conservation areas (SMCAs/MCAs) but would still provide the original protections to the species and ecosystems each of the MPAs intends to preserve.

The allowance of pelagic or HMS in these areas would provide more equal opportunities to anglers around Southern California targeting fast moving species, like billfish or tuna. Currently, these species cannot be followed into these zones as they move through them, traveling with the currents rather than remain on the structure or in the local ecosystems the MPAs are intended to protect. If accepted, anglers would have the opportunity to follow these species as they constantly flow in and out of these areas.

The push for this change is backed by the California State 2022 MPA Decadal Review, the MRC's near-term objectives, the 2016 MPA Master Plan, and several other state and federal reports/comments. We the fisherman, groups, clubs, and business owners, of California kindly ask for your approval of this petition.

Sincerely,

AFTCO

CCA California

Pfleger Institute of Environmental Research (P.I.E.R.)

Wild Oceans

BD Outdoors

Bear Flag Fish Co.

Bluewater Seafood

Chula Seafood

The Tuna Club

Balboa Angling Club

CISCOS Sportfishing

Hooks Sportfishing

Legit Sportfishing

Eric's Tackle Shop

Channel Coast Marine

Executive Yachts

Bight Sportfishing

Bad Company Fishing Adventures

Seal Beach Fish Co.

Wild Local Caught Seafood

Santa Monica Seafood

Ocean Pride Seafood

Santa Barbara Fish Market

Special Individuals: Chugey S, Theresa L, Casey S, Nathen P, Ron H, Sean B, Morgan L, Bill S, Donald K, Christian H, Andrew W, Carl S, Michael M, Thomas C, Wes L, Marc H, Eric H, Bryce H, Ethan H, Steve W, Don G, Ryder D, Fisher D, Jonnah G, Jake K, Brandon H, Patrick O, John J, Bill W, Steve M, Eric H, Sean S, Ryder A, Evan K

And the over 880 members of the public that have signed the public support petition as of submittal (11/22), visible here: <https://chnng.it/2wy2dHSS6r>



Documents 3, 4, and 5: Original founding reasoning for the Footprint, Gull Island, and Santa Barbara Island MPAs respectively, to be created and expanded into federal waters of the marine sanctuary from the Channel Islands CEQA in 2002. There is little to no mention of pelagic or HMS species, with primary objectives for the Footprint MPA being groundfish replenishment, and for Gull Island and SBI MPAs, being either or a mix of abalone, rockfish, or endangered bird populations. Original paper found here: <https://nrmsecure.dfg.ca.gov/FileHandler.ashx?DocumentID=151023>

Footprint State Marine Reserve

The Footprint SMR is located in open waters in the passage south of Santa Cruz and Anacapa Islands. The Footprint SMR is 28.6 nm², **6.4 square nautical miles of which would be within State waters and the rest** entirely within Federal waters. It is described and analyzed here as a part of the entire recommendation, but not the decision before the Fish and Game Commission. The majority of the proposed Footprint SMR is sand or gravel between 90-900 ft. The Footprint includes several submerged rocky features, including pinnacles and submarine canyons that once supported large population of numerous rockfish species. Today, the rockfish populations around the Footprint are severely depleted from intensive recreational and commercial fishing in the region. Although populations are depleted, the habitat supports a variety of species, including bocaccio and cowcod, both recognized as overfished by the PFMC. Fish populations in the vicinity of the Footprint are likely to respond to protection within a reserve through increased density, individual size, and reproductive potential.



Gull Island, Santa Cruz Island State Marine Reserve

The Gull Island SMR is located on the southwest side of Santa Cruz Island. The reserve includes 2.9 nautical miles of shoreline from Morse Point to the point along the shore at 33° 58' N, 119° 48' W. The reserve extends south approximately three nautical miles to the State waters boundary. The Gull Island SMR contains 16.2 square nautical miles. A subsequent Federal waters phase would add 22.1 square nautical miles for a cumulative total of 38.3 square nautical miles.

Historically, Gull Island supported a diverse and abundant marine fauna. Although these populations are reduced, the habitat supports a variety of species. Fish populations in the vicinity of Gull Island are likely to respond to protection within a reserve through increased density, individual size, and reproductive potential. The Gull Island SMR would protect a variety of different habitat types from the nearshore to the continental slope. Sand beach is the predominant shoreline habitat at the border of the Gull Island SMR. Endangered snowy plovers may occur there and the beach supports one of the few populations of pismo clams at the islands. The remaining shoreline is covered with cobble beaches.

Subtidal habitats in the Gull Island SMR are mixed sand and rocky reefs. Red and green algae dominate inshore areas. Gull Island supports an intermittent population of giant kelp, but the kelp populations are reduced. Subtidal habitats support patchy populations of surfgrass. Rocky intertidal and subtidal habitats once supported populations of red, pink, white, and black abalone, but only a small population of red abalone, and very few black abalone have been observed recently. The Gull Island area supports large populations of purple urchins. Rocky subtidal habitats from Gull Island to Laguna Point support populations of spiny lobster. Purple hydrocoral (Allopora) is found in deeper rocky reefs around Gull Island.

Shallow rocky habitat extends offshore to Gull Island. Nearshore reefs support populations of various rockfish species. However, rockfish are not as diverse in this region because of physical changes associated with the mixing of warmer waters from the California Counter Current with cooler waters from the California Current. Southern species such as

5-27

California sheephead and wrasses are relatively common in the Gull Island region. The region also supports spawning populations of white seabass and halibut. Thresher and mako sharks are fished in the deeper waters near stronger currents.



Santa Barbara Island State Marine Reserve

Santa Barbara Island SMR is located at the southeast side of Santa Barbara Island. The reserve includes one nautical mile of shoreline from South Point to the eastern point of the

5-22

island. The reserve boundaries extend east and south to the State waters boundary. The Santa Barbara Island SMR contains 13.2 square nautical miles. A subsequent Federal waters addition would add 46.3 square nautical miles for a cumulative total of 59.5 square nautical miles.

Santa Barbara Island, Sutil Island, and Shag Rock support major seabird and marine mammal colonies. Santa Barbara Island supports breeding colonies of numerous seabirds, including the endangered California brown pelican, western gull, black oystercatcher, black storm-petrel, Leach's storm-petrel, Brandt's cormorant, pelagic cormorant, Cassin's auklet, pigeon guillemot and Xantus's murrelet. California sea lions haul out on sandy beaches on the southeastern side of Santa Barbara Island. Harbor seals and northern elephant seals occasionally haul out in the same place.

The exposed rocky shoreline along Santa Barbara Island is interspersed with occasional cobble beaches (10-12 m wide) in protected coves. The rocky intertidal habitat descends steeply to patchy reefs in large areas of sand. Patchy populations of surfgrass grow on subtidal rocks (15-20 m). Populations of giant kelp on reefs around Santa Barbara Island have declined relative to historical data. Red and purple sea urchins and brittle stars (*Ophiothrix*) dominate the rocky subtidal habitats around Santa Barbara Island. Spiny lobsters are abundant in rocky subtidal habitats in the vicinity of South Point and large mussel beds can be found in the rocky intertidal habitats on the southeastern side of Santa Barbara Island.

The continental shelf drops to approximately 200 m less than ½ mile from shore, and continues to drop to 400 m within 3 miles of Santa Barbara Island. In the past, populations of white, green, pink, and black abalone inhabited intertidal and subtidal rocky habitats. The reserve includes rocky subtidal habitats, from approximately 25-66 m, that may contribute to the recovery of the endangered white abalone. Sandy subtidal habitats support halibut populations near the northern border of the Santa Barbara Island SMR. California sheephead have been observed near South Point.




Document 6: Original 2002 CEQA: Dr. Ray Hilborn stating the size of an MPA must be large relative to a species' total movement to be actually impactful on their population abundance.

has reached population levels which increase natural mortality rates...@ Likewise, Dr. Ray Hilborn of the University of Washington=s College of Ocean and Fishery Sciences noted in comments on proposals for marine reserves in the Sanctuary that, A...it is almost universally accepted that exploitation reduces population sizes.... **No-take areas, so long as their size is large relative to the movement of the species, will lead to increased abundance within the reserve.**@

Documents 7, 8, and 9: Current Footprint, Gull Island, and SBI MPA descriptions in “Why the location was chosen...” (Highlighted below)

Footprint State Marine Reserve

Southern California - Established January 2012



What is a California marine protected area (or "MPA")?

An MPA is a type of managed area primarily set aside to protect or conserve marine life and habitats in marine or estuarine waters. California's MPA Network consists of 124 areas with varying levels of protection, and 14 special closures, all designed to help safeguard the state's marine ecosystems. Fishing and collecting are banned at marine reserves such as Footprint State Marine Reserve, providing this MPA with the highest level of protection.

One goal for California's MPAs was to strategically place them near each other to form an interconnected network that would help to preserve the flow of life between marine ecosystems. Within that network each MPA has unique goals and regulations, and non-consumptive activities, permitted scientific research, monitoring, and educational pursuits may be allowed.




Why was this location chosen for a state marine reserve?

One of the goals for Footprint State Marine Reserve is to protect the deepwater communities of fish and invertebrates located at this convergence of warm water currents from the tropics and cold water currents from Alaska. The resulting rich and varied marine life here includes many different species. Colorful cold-water corals and sponges cover the large cobble and boulder features of the reserve. Deep, rocky reefs provide habitat for copper rockfish, cowcod, and bocaccio, while brittle stars and California sea cucumbers can be found on the sandy seafloor.


Footprint State Marine Reserve was established as one of 13 Channel Islands MPAs in 2003, and re-established as part of the statewide MPA Network in 2012. This state marine reserve shares a southern border with the federal Footprint Marine Reserve, and overlaps a portion of the [Channel Islands National Marine Sanctuary](#). Placing a state marine reserve here provides very high levels of protection for local marine species and the habitats they use.


Quick Facts: Footprint State Marine Reserve


- **MPA size:** 7.05 square miles
- **Depth range:** 171 to 1,656 feet
- **Habitat composition:**
 - Rock: 0.35 square miles
 - Sand/mud: 4.80 square miles



ENTRY
O.K.


Non-Consumptive
Activities



No Fishing


No Collecting


Further Information:

- MPA Website: www.wildlife.ca.gov/MPAs
- MPA and Sportfishing Interactive Map: www.wildlife.ca.gov/OceanSportfishMap
- Email: AskMarine@wildlife.ca.gov

Photos - Upper: Common bottlenose dolphins leaping at the reserve. photo © Adam Seary CC BY-NC 2.0 Lower right: Copper rockfish and pink gorgonian near Anacapa Island. CDFW/MARE photo. Lower left: Purple gorgonian and a sea cucumber near Anacapa Island. CDFW/MARE photo.



Report poachers and polluters
Call CallTip: 1 (888) 334-2258
or text 847411 - begin message with "Calltip"
followed by the details.





Gull Island State Marine Reserve

Southern California - Established January 2012



What is a California marine protected area (or "MPA")?

An MPA is a type of managed area primarily set aside to protect or conserve marine life and habitats in marine or estuarine waters. California's MPA Network consists of 124 areas with varying levels of protection, and 14 special closures, all designed to help safeguard the state's marine ecosystems. Fishing and collecting are banned at marine reserves such as Gull Island State Marine Reserve, providing this MPA with the highest level of protection.

One goal for California's MPAs was to strategically place them near each other to form an interconnected network that would help to preserve the flow of life between marine ecosystems. Within that network each MPA has unique goals and regulations, and non-consumptive activities, permitted scientific research, monitoring, and educational pursuits may be allowed.

Why was this location chosen for a state marine reserve?

One of the goals for Gull Island State Marine Reserve is to protect the diverse submarine canyon, rocky reef and pinnacle, kelp forest, and sandy plain habitat found at this location, where warm water currents from the tropics and cold water currents from Alaska converge. These habitats are used by a rich and varied selection of marine fish and invertebrates such as purple hydrocoral, a species not often seen in the Northern Channel Islands. Kelp forests and reefs provide shelter for opaleye, California spiny lobster, and cabezon, while schools of California barracuda and bonito may be seen in deeper, offshore waters.

Gull Island State Marine Reserve was established as one of 13 Channel Islands MPAs in 2003, and re-established as part of the statewide MPA Network in 2012. The reserve shares a southern border with the federal Gull Island Marine Reserve, and overlaps a portion of the Channel Islands National Marine Sanctuary and Channel Islands National Park. Placing a state marine reserve here provides very high levels of protection for local marine species and the habitats they use.



Report poachers and polluters
Call CallTip: 1 (888) 334-2258

or text 847411 - begin message with "CallTip"
followed by the details.



Quick Facts: Gull Island State Marine Reserve

- **MPA size:** 19.93 square miles
- **Shoreline span:** 3.2 miles
- **Depth range:** 0 to 2,205 feet
- **Habitat composition:**
 - Rock: 4.03 square miles
 - Sand/mud: 16.55 square miles



Further Information:

- MPA Website: www.wildlife.ca.gov/MPAs
- MPA and Sportfishing Interactive Map: www.wildlife.ca.gov/OceanSportfishMap
- Email: AskMarine@wildlife.ca.gov

Photos - Upper: Gull Island, photo by R. Schwemmer, NOAA/CIIMS. Lower right: Purple hydrocoral and sea urchin at Gull Island State Marine Reserve, CDFW photo by D. Stein. Lower left: Opaleye in the kelp forest at Gull Island State Marine Reserve, CDFW photo by D. Stein

Santa Barbara Island State Marine Reserve

Southern California - Established January 2012



What is a California marine protected area (or "MPA")?

An MPA is a type of managed area primarily set aside to protect or conserve marine life and habitats in marine or estuarine waters. California's MPA Network consists of 124 areas with varying levels of protection, and 14 special closures, all designed to help safeguard the state's marine ecosystems. Fishing and collecting are banned at marine reserves such as Santa Barbara Island State Marine Reserve, providing this MPA with the highest level of protection.

One goal for California's MPAs was to strategically place them near each other to form an interconnected network that would help to preserve the flow of life between marine ecosystems. Within that network each MPA has unique goals and regulations, and non-consumptive activities, permitted scientific research, monitoring, and educational pursuits may be allowed.

Why was this location chosen for a state marine reserve?

One of the goals for Santa Barbara Island State Marine Reserve is to protect the sandy seafloor, surfgrass, kelp forest, and rocky nearshore habitat found there. Sea urchins, California mussels, and acorn barnacles thrive along the island's rocky coastline. Giant sea bass, California sheephead, and Pacific angel sharks hunt and seek shelter in the island's kelp forests and eelgrass beds, while California halibut and other flatfish rest in the sandy sediments. Santa Barbara Island is also home to a large breeding colony of Scripps's murrelet, a seabird on California's threatened species list, and fourteen other species of bird.

Santa Barbara Island State Marine Reserve was established as one of 13 Channel Islands MPAs in 2003, and re-established as part of the statewide MPA Network in 2012. This state marine reserve shares a southeastern border with the federal Santa Barbara Island Marine Reserve. The reserve overlaps part of the Channel Islands National Park and Channel Islands National Marine Sanctuary. Placing a state marine reserve here provides very high levels of protection for local marine species and the habitats they use.



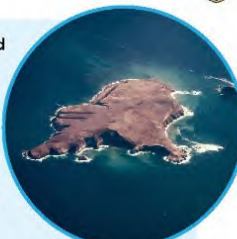
Report poachers and polluters
Call CallTip: 1 (888) 334-2258

or text 847411 - begin message with "CallTip"
followed by the details.



Quick Facts: Santa Barbara Island State Marine Reserve

- **MPA size:** 12.77 square miles
- **Shoreline span:** 0.8 miles
- **Depth range:** 0 to 1,655 feet
- **Habitat composition:**
 - Rock: 0.74 square miles
 - Sand/mud: 2.43 square miles



Further Information:

- MPA Website: www.wildlife.ca.gov/MPAs
- MPA and Sportfishing Interactive Map: www.wildlife.ca.gov/OceanSportfishMap
- Email: AskMarine@wildlife.ca.gov

Photos - Upper: Aerial view of Santa Barbara Island, photo © Jesse Hodge CC BY NC ND 2.0. Lower right: Pacific angel shark at Santa Barbara Island State Marine Reserve, CDFW/MARE photo. Lower left: Pink gorgonian at Santa Barbara Island State Marine Reserve, CDFW/MARE photo.



Document 10: MPA Master plan goal for the southern section, that calls for the protections of at-risk local species while allowing for limited take of pelagic or HMS.

Goal 2. To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

1. Help protect or rebuild populations of rare, threatened, endangered, depressed, depleted, or overfished species, and the habitats and ecosystem functions upon which they rely.¹⁴
2. Sustain or increase reproduction by species likely to benefit from MPAs, with emphasis on those species identified as more likely to benefit from MPAs, and promote retention of large, mature individuals.¹⁵
3. Sustain or increase reproduction by species likely to benefit from MPAs with emphasis on those species identified as more likely to benefit from MPAs through protection of breeding, spawning, foraging, rearing or nursery areas or other areas where species congregate.
4. Protect selected species and the habitats on which they depend while allowing some commercial and/or recreational harvest of migratory, highly mobile, or other species; and other activities.

Document 11: Denied petition for White Shark MPA on grounds MPAs are **especially not focused** on pelagic or HMS (Highlighted below)

Appendix G: Decadal Management Review Supplemental Tables



ACTION TYPE	YEAR	REQUEST	RATIONALE	ADAPTIVE MANAGEMENT ACTION TAKEN
Petition denied	2020	Petition submitted to amend MPA regulations to allow surfboard fishing at the South La Jolla SMR.	California Constitution, Article 1 Section 25, recreational take from a surfboard, even catch-and-release is not a fishery	No fishing is allowed in SMR per design criteria
Petition denied	2020	Petition submitted to establish MPA at Padaro Beach, Carpinteria, to protect great white shark nursery grounds.	An MPA with boating and fishing restrictions at Padaro Beach, Carpinteria, will help protect white shark nursery grounds.	MPAs are intended to protect ecosystems, not individual species, especially highly mobile, pelagic species
Petition denied	2020	Petition submitted to add unlimited recreational take of invasive species <i>Sargassum horneri</i> in Crystal Cove SMCA	CDFW failed to respond and stop the spread of the invasive species <i>Sargassum horneri</i> , plus <i>Sargassum horneri</i> is not a marine resource.	No recreational culling permitted within MPAs.



Document 12: MPA Decadal Review-Appendix A: Comprehensive Recommendations for the Review- Recommends to open legacy grounds and allow pelagic/HMS take in MPAs (Highlighted below)

Regulatory and Review Framework


- Conduct annual engagement meetings with stakeholders to inform them about MPA Management Program activities that inform decadal reviews.
- Define clear management reporting goals, including the scale of reporting at the statewide, regional, or local scale.
- Ensure that adaptive management changes to individual MPAs and the MPA Network are evidence based.
- Simplify designations by changing no-take SMCAs to SMRs after maintenance of existing infrastructure is permitted.
- **Return MPA fishing opportunities, especially in legacy fishing areas that were previously open to fishing.**
- **Allow take of migratory and pelagic species in MPAs that currently do not allow it.**
- Allow commercial urchin take in MPAs that allow commercial lobster take.
- Do not allow boat operations within 100 yards of a remnant kelp forest within MPAs.
- Requests to change specific MPAs (not including formal petitions; see Appendix G):
 - Relocate Piedras Blancas MPA north, just south of Cape San Martin to protect nursery grounds.
 - Increase the size of Matlahuayl State Marine Reserve to include Point La Jolla and the Boomer Beach area where the sea lion colony is located.

Document 13: NOAA Stock and Fishery Analysis for Bluefin Tuna, stock status, and minimal habitat impacts highlighted.

SPECIES DIRECTORY

Pacific Bluefin Tuna

Overview | Seafood | Management | Resources



Pacific Bluefin Tuna
Thunnus orientalis

Also Known As
Northern bluefin tuna, Tuna, Bluefin tuna


Quick Facts

REGION: Pacific Islands, West Coast


FISHWATCH
U.S. SEAFOOD FACTS

About the Species


Although Pacific-wide populations are well below target levels, U.S. wild-caught Pacific bluefin tuna is a smart seafood choice because it is sustainably managed under rebuilding measures that limit harvest by U.S. fishermen.




School of bluefin tuna. Credit: NOAA Fisheries




Population
The stock is overfished, but **the fishing rate promotes population growth.**



Fishing Rate
Not subject to overfishing.



Habitat Impacts
Fishing gear used to catch bluefin tuna rarely contacts the seafloor so habitat impacts are minimal.



Bycatch
Regulations are in place to minimize bycatch.

Population Status

- According to the 2022 stock assessment, Pacific bluefin tuna is overfished, but not subject to overfishing. Summary stock assessment information can be found on [Stock SMART](#).
- NOAA Fisheries first determined the Pacific bluefin tuna stock to be overfished in 2013. The 2022 assessment completed by the [International Scientific Committee for Tuna and Tuna-Like Species](#) in the North Pacific Ocean found the stock is still overfished, but **stock size has significantly increased.**

- The average annual bluefin landings by U.S. commercial vessels fishing in the eastern Pacific Ocean represent only 2 percent of the average annual landings from all fleets fishing there.



Document 14: NOAA Stock and Fishery Analysis for Swordfish, stock status and minimal habitat impacts highlighted.


SPECIES DIRECTORY

North Pacific Swordfish

Overview | Seafood | Resources

North Pacific Swordfish

Xiphias gladius




Also Known As
Broadbill swordfish, Espada, Emperado, A'u, Mekajiki, Shuzome

Quick Facts
REGION: Pacific Islands, West Coast

FISHWATCH
U.S. SEAFOOD FACTS

About the Species

U.S. wild-caught North Pacific swordfish is a smart seafood choice because it is sustainably managed and responsibly harvested under U.S. regulations.



Researchers tagging a swordfish. Credit: Pflieger Institute of Environmental Research

Population

The stocks are not overfished.

Fishing Rate

The Western and Central North Pacific stock is not subject to overfishing. Reduced to end overfishing for the Eastern Pacific stock.

Habitat Impacts

Fishing gear used to catch Pacific swordfish rarely contacts the seafloor so habitat impacts are minimal.

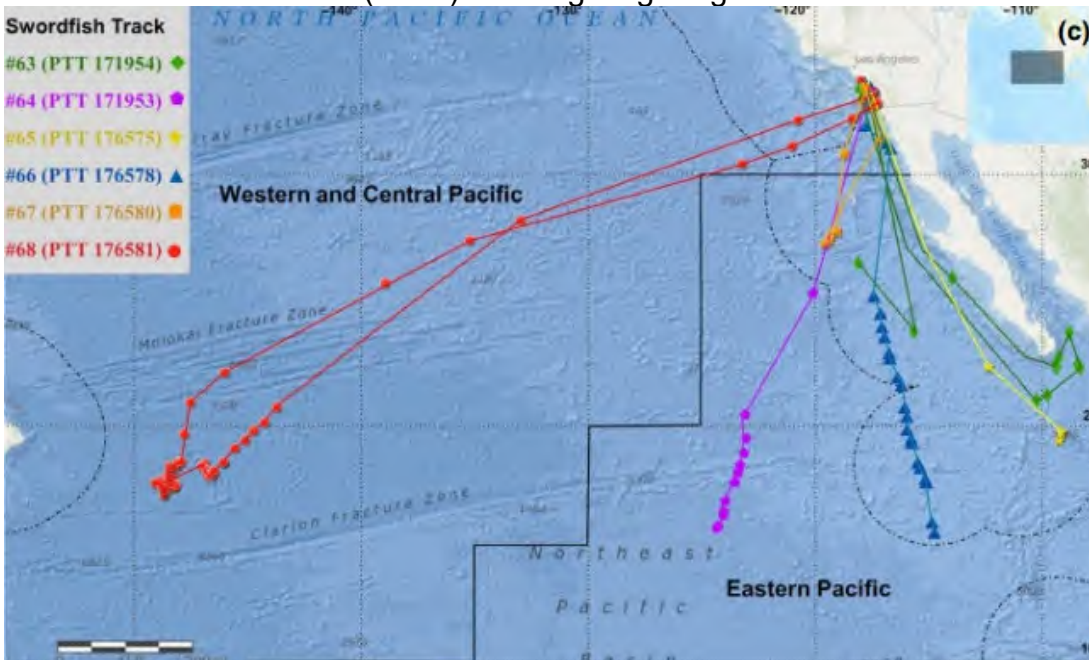
Bycatch

Regulations are in place to minimize bycatch.

Population Status

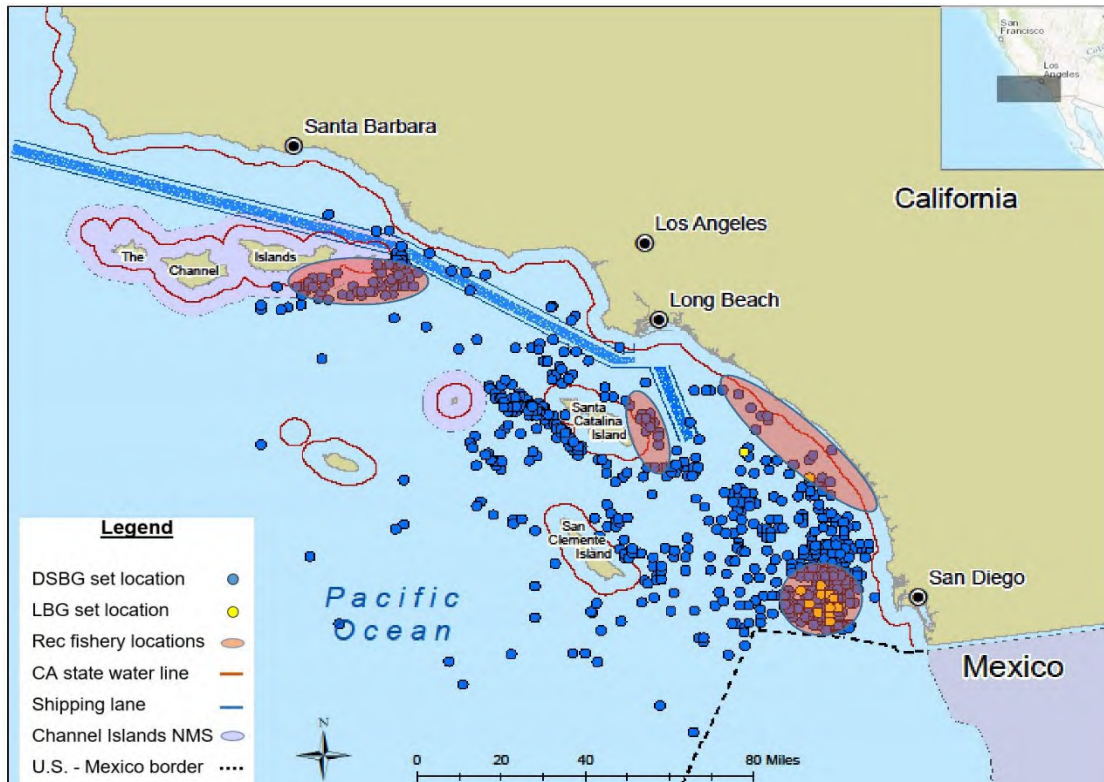
- There are two stocks of North Pacific swordfish: the Eastern Pacific Ocean stock and the Western and Central North Pacific Ocean stock. According to the most recent stock assessments:
 - The Eastern Pacific Ocean stock is not overfished but is subject to overfishing (2014 stock assessment). Summary stock assessment information can be found on [Stock SMART](#).
 - The Western and Central North Pacific Ocean stock is not overfished and is not subject to overfishing (2018 stock assessment). Summary stock assessment information can be found on [Stock SMART](#).

Document 15: Swordfish migration data collected via satellite tags deployed by the Pflieger Institute of Environmental Research (PIER) showing long ranges swordfish travel relative to the MPAs.





Document 16: DSBG and deep drop fishery efforts map displaying the wide area HMS fishing activity covers, and lack of northern Santa Cruz and Anacapa island efforts, where the only 2 SMCAs are located.



Document 17: Current pelagic finfish limited take SMCAs outside of the Channel Islands Network. These limited take MPAs were implemented in 2012, after the island network in 2003, and display the 9 year shift toward more pelagic allowed areas.

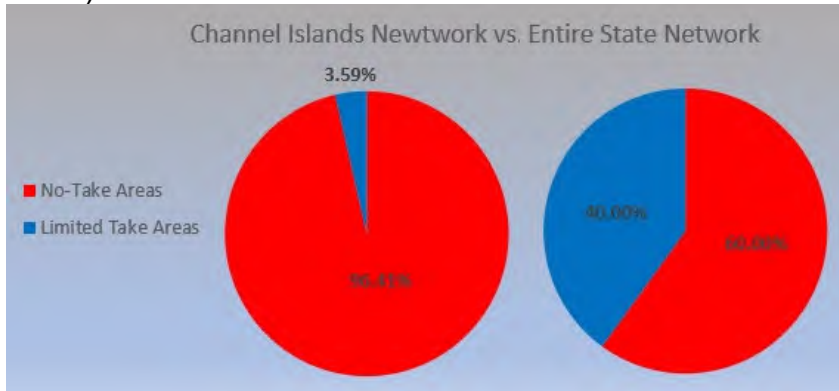




Document 18: Definition of State Marine Conservation Areas per California Code of Regulations Title 14 Section 632(a)(1)(C). The recommended change would make these MPAs effectively SMCAs and MCAs with limited HMS take and CPS possession.

(C) State Marine Conservation Areas: In a state marine conservation area, it is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource for commercial or recreational purposes, or a combination of commercial and recreational purposes except as specified in subsection 632(b), areas and special regulations for use. The department may issue scientific collecting permits pursuant to Section 650. The commission may authorize research, education, and recreational activities, and certain commercial and recreational harvest of marine resources, provided that these uses do not compromise protection of the species of interest, natural community, habitat, or geological features.

Document 19: Charts displaying no-take vs limited-take areas around the Channel Islands vs. the whole State MPA Network showing the disparity of no-take areas around the islands. If the changes are made, this disparity would all but disappear (see Table 1 in the analysis for before and after ratios). The calculation also includes federal sections of the MPAs.



Document 20: How the regulatory language could read if the preferred proposed change was selected (limited HMS take, deep drop methods and federal DSBG allowed, no nearshore closure)

NOTE: Existing regulation modifications presented similar to how CDFW shows yearly changes, ~~crossed out~~ being removed regulation and **red** being the amended regulation. State and federal sections are listed with proposed changes. For simplicity the federal amendments will follow the states for the MPA specific changes.

State and Federal Definition Modifications-

Amend: 14 CCR § 632 (a)** and 15 CFR 922.71:

(13) **Highly Migratory Species.** Highly migratory species, for the purpose of this section, are a subset of finfish defined as: albacore, bluefin, bigeye, and yellowfin tuna (*Thunnus* spp.); skipjack tuna (*Katsuwonus pelamis*); dorado (dolphinfish) (*Coryphaena hippurus*); striped marlin (*Tetrapturus audax*); thresher sharks (common, pelagic, and bigeye) (*Alopias* spp); shortfin mako shark (*Isurus oxyrinchus*); blue shark (*Prionace glauca*); and Pacific swordfish (*Xiphias gladius*). *Marlin is not allowed for commercial take

(14) **Coastal Pelagic Species:** Coastal pelagic species, for the purpose of this section, are a subset of finfish and invertebrates defined as: northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicus*), jack mackerel (*Trachurus symmetricus*), and market squid (*Loligo opalescens*).



**** (13) and (14)** exclusive to 14 CCR § 632 (a), amendments to 15 CFR 922.71 would read identical but not include “(13)” and “(14).” Highly Migratory species and Coastal Pelagic species are defined under State regulations (Title 14 §1.49 and 1.39), meaning the change to Title 14 § 632 (a) may not be required.

State MPA Modifications-

Amend: 14 CCR § 632 (b) (109)

(109) Gull Island State Marine ~~Reserve~~ **Conservation Area**.

(A) This area is bounded by the mean high tide line and straight lines connecting the following points in the order listed except where noted:

33° 58.065' N. lat. 119° 50.967' W. long.;

33° 58.000' N. lat. 119° 51.000' W. long.;

33° 58.000' N. lat. 119° 53.000' W. long.;

33° 55.449' N. lat. 119° 53.000' W. long.; thence eastward along the three nautical mile offshore boundary to

33° 54.257' N. lat. 119° 48.000' W. long.; and

33° 57.769' N. lat. 119° 48.000' W. long.

(B) ~~Area restrictions defined in subsection 632(a)(1)(A) apply.~~ **Area restrictions defined in subsection 632(a)(1)(C) apply, with the following specified exceptions:**

- 1. The recreational take of highly migratory species is allowed.**
- 2. The commercial take of highly migratory species by hook-and-line and swordfish by harpoon is allowed. The use of standard deep-set-buoy-gear is permitted outside of state waters (3nm).**
- 3. The possession of coastal pelagic species is allowed.**

Amend: 14 CCR § 632 (b) (114)

(114) Footprint State Marine ~~Reserve~~ **Conservation Area**.

(A) This area is bounded by the straight lines connecting the following points in the order listed except where noted:

33° 59.300' N. lat. 119° 30.965' W. long.;

33° 57.510' N. lat. 119° 30.965' W. long.; thence eastward along the three nautical mile offshore boundary to

33° 57.264' N. lat. 119° 25.987' W. long.;

33° 59.300' N. lat. 119° 25.987' W. long.; and

33° 59.300' N. lat. 119° 30.965' W. long.

(B) ~~Area restrictions defined in subsection 632(a)(1)(A) apply.~~ **Area restrictions defined in subsection 632(a)(1)(C) apply, with the following specified exceptions:**

- 1. The recreational take of highly migratory species is allowed.**



2. The commercial take of highly migratory species by hook-and-line and swordfish by harpoon is allowed. The use of standard deep-set-buoy-gear is permitted outside of state waters (3nm).
3. The possession of coastal pelagic species is allowed.

Amend: 14 CCR § 632 (b) (116)

(116) Santa Barbara Island State Marine ~~Reserve~~ **Conservation Area**.

(A) This area is bounded by the mean high tide line and straight lines connecting the following points in the order listed except where noted:

33° 28.500' N. lat. 119° 01.813' W. long.;

33° 28.500' N. lat. 118° 58.051' W. long.; thence along the three nautical mile offshore boundary to

33° 24.842' N. lat. 119° 02.200' W. long.; and

33° 27.911' N. lat. 119° 02.200' W. long.

(B) ~~Area restrictions defined in subsection 632(a)(1)(A) apply.~~ **Area restrictions defined in subsection 632(a)(1)(C) apply, with the following specified exceptions:**

1. The recreational take of highly migratory species is allowed.
2. The commercial take of highly migratory species by hook-and-line and swordfish by harpoon is allowed. The use of standard deep-set-buoy-gear is permitted outside of state waters (3nm).
3. The possession of coastal pelagic species is allowed.

NOTE: It may not be required to mention deep-set-buoy-gear (DSBG) in the state regulation as it would not be allowed in state waters. However, as all regulations (State and federal) may be listed under one “rulebook” this mention of federal DSBG allowance maybe needed.

Federal Modifications-

Amend: 15 CFR 922.73(b):

(b) **Marine conservation area.** Unless prohibited by [50 CFR part 660](#) (Fisheries off West Coast States), the following activities are prohibited and thus unlawful for any person to conduct or cause to be conducted within the **specified** marine conservation areas described in appendix C to this subpart, except as specified in paragraphs (b) through (e) of [§ 922.72](#):

(b.1). Anacapa Island Marine Conservation Area

(1) Harvesting, removing, taking, injuring, destroying, collecting, moving, or causing the loss of any Sanctuary resource, or attempting any of these activities, except:

(i) Recreational fishing for pelagic finfish; or

(ii) Commercial and recreational fishing for lobster.

(2) Possessing fishing gear on board a vessel, except legal fishing gear used to fish for lobster or pelagic finfish, unless such gear is stowed and not available for immediate use.

(3) Possessing any Sanctuary resource, except legally harvested fish.

(b.2) Gull Island (Santa Cruz Island) Marine Conservation Area



(1) Harvesting, removing, taking, injuring, destroying, collecting, moving, or causing the loss of any Sanctuary resource, or attempting any of these activities, except:

- (i) Recreational fishing for highly migratory species; or
- (ii) Commercial fishing for highly migratory species by hook-and-line and harpoon. DSBG is allowed inside of federal waters.
- (iii) Possession of coastal pelagic species.

(2) Possessing fishing gear on board a vessel, except legal fishing gear used to fish for highly migratory species, unless such gear is stowed and not available for immediate use.

(3) Possessing any Sanctuary resource, except legally harvested fish.

(b.3) Footprint Marine Conservation Area

(1) Harvesting, removing, taking, injuring, destroying, collecting, moving, or causing the loss of any Sanctuary resource, or attempting any of these activities, except:

- (i) Recreational fishing for highly migratory species; or
- (ii) Commercial fishing for highly migratory species by hook-and-line and harpoon. DSBG is allowed inside of federal waters.
- (iii) Possession of coastal pelagic species.

(2) Possessing fishing gear on board a vessel, except legal fishing gear used to fish for highly migratory species, unless such gear is stowed and not available for immediate use.

(3) Possessing any Sanctuary resource, except legally harvested fish.

(b.4) Santa Barbara Island Marine Conservation Area

(1) Harvesting, removing, taking, injuring, destroying, collecting, moving, or causing the loss of any Sanctuary resource, or attempting any of these activities, except:

- (i) Recreational fishing for highly migratory species; or
- (ii) Commercial fishing for highly migratory species by hook-and-line and harpoon. DSBG is allowed inside of federal waters.
- (iii) Possession of coastal pelagic species.

(2) Possessing fishing gear on board a vessel, except legal fishing gear used to fish for highly migratory species, unless such gear is stowed and not available for immediate use.

(3) Possessing any Sanctuary resource, except legally harvested fish.

Amend: Appendix B to Subpart G of Part 922 (Marine Reserve Boundaries) for 15 CFR 922 B.4, B.5, B.6, B.7, and B.8.

B.4. Gull Island (Santa Cruz Island) Marine Reserve

~~The Gull Island Marine Reserve (Gull Island) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B-4, and the following textual description.~~

~~The Gull Island boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary then follows the 3 nmi~~



~~State boundary westward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.~~

~~Table B-4—Gull Island (Santa Cruz Island) Marine Reserve~~

Point	Latitude	Longitude
1	33.86195 ° N	119.80000 " W
2	33.86195 ° N	119.88330 " W
3	33.92690 ° N	119.88330 " W
4	33.90700 ° N	119.80000 " W
5	33.86195 ° N	119.80000 " W

B.4. Scorpion (Santa Cruz Island) Marine Reserve

The Scorpion Marine Reserve (Scorpion) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B-5, and the following textual description.

The Scorpion boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary then follows the 3 nmi State boundary westward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.

~~Table B-4~~**—Scorpion (Santa Cruz Island) Marine Reserve**

Point	Latitude	Longitude
1	34.15450 ° N	119.59170 " W
2	34.15450 ° N	119.54670 " W
3	34.10140 ° N	119.54670 " W
4	34.10060 ° N	119.59170 " W
5	34.15450 ° N	119.59170 " W

B.6. Footprint Marine Reserve



~~The Footprint Marine Reserve (Footprint) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–6, and the following textual description.~~

~~The Footprint boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary follows the 3 nmi State boundary northeastward and then southeastward until it intersects the line defined by connecting Point 4 and Point 5 along a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.~~

~~Table B–6—Footprint Marine Reserve~~

Point	Latitude	Longitude
1	33.90198 ° N	119.43311 " W
2	33.90198 ° N	119.51609 " W
3	33.96120 ° N	119.51609 " W
4	33.95710 ° N	119.43311 " W
5	33.90198 ° N	119.43311 " W

B.5. Anacapa Island Marine Reserve

The Anacapa Island Marine Reserve (Anacapa Island) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–7, and the following textual description.

The Anacapa Island boundary extends from Point 1 to Point 2 along a straight line. It then extends to the 3 nmi State boundary where a line defined by connecting Point 2 and Pont 3 with a straight line intersects the 3 nmi State boundary. The boundary follows the 3 nmi State boundary westward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.

Table B–5—Anacapa Island Marine Reserve

Point	Latitude	Longitude
1	34.08330 ° N	119.41000 " W
2	34.08330 ° N	119.35670 " W
3	34.06450 ° N	119.35670 " W
4	34.06210 ° N	119.41000 " W



Point	Latitude	Longitude
-------	----------	-----------

5 34.08330 ° N 119.41000 " W

~~B.8. Santa Barbara Island Marine Reserve~~

~~The Santa Barbara Island Marine Reserve (Santa Barbara) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–8, and the following textual description.~~

~~The Santa Barbara boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary follows the 3 nmi State boundary northeastward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line. The boundary then extends from Point 5 to Point 6 along a straight line.~~

~~Table B–8—Santa Barbara Island Marine Reserve~~

Point	Latitude	Longitude
-------	----------	-----------

~~1 33.36320 ° N 118.90879 " W~~

~~2 33.36320 ° N 119.03670 " W~~

~~3 33.41680 ° N 119.03670 " W~~

~~4 33.47500 ° N 118.97080 " W~~

~~5 33.47500 ° N 118.90879 " W~~

~~6 33.36320 ° N 118.90879 " W~~

Amend: Appendix C to Subpart G of Part 922 (Marine Conservation Area ~~Boundary~~ **Boundaries**) for 15 CFR 922

C.2. Gull Island (Santa Cruz Island) Marine Conservation Area

The Gull Island Marine Conservation Area (Gull Island) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–4, and the following textual description.

The Gull Island boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary then follows the 3 nmi State boundary westward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.

Table B–4—Gull Island (Santa Cruz Island) Marine Conservation Area

Point	Latitude	Longitude
-------	----------	-----------

1 33.86195 ° N 119.80000 " W



Point	Latitude	Longitude
2	33.86195 ° N	119.88330 " W
3	33.92690 ° N	119.88330 " W
4	33.90700 ° N	119.80000 " W
5	33.86195 ° N	119.80000 " W

C.3. Footprint Marine Conservation Area

The Footprint Marine Conservation Area (Footprint) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–6, and the following textual description.

The Footprint boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary follows the 3 nmi State boundary northeastward and then southeastward until it intersects the line defined by connecting Point 4 and Point 5 along a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line.

Table B–6—Footprint Marine Conservation Area

Point	Latitude	Longitude
1	33.90198 ° N	119.43311 " W
2	33.90198 ° N	119.51609 " W
3	33.96120 ° N	119.51609 " W
4	33.95710 ° N	119.43311 " W
5	33.90198 ° N	119.43311 " W

C.4. Santa Barbara Island Marine Conservation Area

The Santa Barbara Island Marine Conservation Area (Santa Barbara) boundary is defined by the 3 nmi State boundary, the coordinates provided in Table B–8, and the following textual description.

The Santa Barbara boundary extends from Point 1 to Point 2 along a straight line. It then extends along a straight line from Point 2 to the 3 nmi State boundary where a line defined by connecting Point 2 and Point 3 with a straight line intersects the 3 nmi State boundary. The boundary follows the 3 nmi State boundary northeastward until it intersects the line defined by connecting Point 4 and Point 5 with a straight line. At that intersection, the boundary extends from the 3 nmi State boundary to Point 5 along a straight line. The boundary then extends from Point 5 to Point 6 along a straight line.

Table B–8—Santa Barbara Island Marine Conservation Area

Point	Latitude	Longitude
1	33.36320 ° N	118.90879 " W
2	33.36320 ° N	119.03670 " W
3	33.41680 ° N	119.03670 " W
4	33.47500 ° N	118.97080 " W
5	33.47500 ° N	118.90879 " W
6	33.36320 ° N	118.90879 " W



Links to data sources:

1. CDFW Marine Species Portal: <https://marinespecies.wildlife.ca.gov/> for Bluefin Tuna, Swordfish, and Striped Marlin
2. NOAA Species Directory: <https://www.fisheries.noaa.gov/species-directory> for North Pacific Swordfish and Pacific Bluefin Tuna
3. PIER papers: <https://pier.org/resources/publications/> for swordfish migratory movements DOI: 10.1111/fog.12461, and DOI:10.1111/j.1365-2419.2010.00543.x
4. WCPFC stock analysis: <https://www.wcpfc.int/current-stock-status-and-advice> for Pacific Bluefin Tuna, North Pacific Swordfish, North Pacific Striped Marlin
5. Oceana DSBG Sustainability Article: <https://usa.oceana.org/press-releases/new-day-dawns-for-whales-sea-turtles-and-sustainable-swordfish-fishing-off-californias-shores/>
6. PEW DSBG Sustainability Article: <https://www.pewtrusts.org/en/research-and-analysis/articles/2023/06/22/us-approves-sustainable-way-to-catch-swordfish-off-west-coast>
7. MPA regional info: <https://californiampas.org/mpa-regions/north-coast-region>
8. Channel Islands Network info (NOAA): <https://channelislands.noaa.gov/about/maps.html#:~:text=Channel%20Islands%20National%20Marine%20Sanctuary%20protects%201%2C470%20square%20miles%20of,Miguel%2C%20and%20Santa%20Barbara%20islands>
9. MPA Master Plan hub: <https://wildlife.ca.gov/Conservation/Marine/MPAs/Master-Plan>

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

- Would give local charter businesses better access to local Northern Channel Island banks, helping business and reducing fuel costs and emissions spent traveling further offshore.
- Would significantly assist the commercial swordfish industry and total domestic swordfish landings, returning legacy harpoon fishery waters, and allowing for more sustainable, domestic product to be landed by harpoon and DSBG after the phase out of drift nets.

12. Forms: If applicable, list any forms to be created, amended or repealed:

None to my knowledge. |

SECTION 3: FGC Staff Only

Date received: **3/14/2025** |

FGC staff action:

- ☐ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____ |

Meeting date for FGC consideration: _____ |



FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition Tracking Number
- ☐ Granted for consideration of regulation change

From: Blake Hermann <[REDACTED]>

Sent: Friday, March 14, 2025 01:37 PM

To: FGC <FGC@fgc.ca.gov>

Subject: Resubmital of Petition2023-15MPA

Hello,

This is the resubmission of the amended petition provided in January. It only contains minor fixes in general spelling and grammar errors, and clarifies "recreational take of pelagics or HMS" as only by hook-and-line or spear. These are the only available methods but just for clarity I included that small edit.

Thanks,

Blake



Petition2025-15MPA Amendment Cover Message

The revisions to this petition involve two sets of informational changes: amendments to the original petition actions and additional stakeholder feedback/rationale that has been gathered over the last year.

Petition actions being revised:

- Modification of options 3 and 4 in the original petition to align with federal feedback and existing regulations in Groundfish Exclusion Areas (GEAs). Rather than only allowing “surface-fishing-methods” the options now restrict “bottom-contact-gears,” like the GEAs. This change was made so that entirely new language and definitions do not need to be drafted in a case options 3 or 4 are selected. (Located on page 3, 11, and 18)
- Addition of a 5th and 6th option consisting of only non-hook-and-line gear methods for consideration, this is not an additional action, just a different combination of allowable methods from the original petition. The new options 5 and 6 would only allow recreational spearfishing of pelagic finfish (option 5) or highly migratory species (option 6) and would allow the commercial take of swordfish by harpoon (options 5 and 6). These options were added to be the least invasive as possible in terms of take, be possibly easier to enforce than the other hook-and-line options and would solve the commercial swordfish gear drift problems for harpoon gears (but not for DSBG). (Located on page 3 and 18)
- Modification of the optional nearshore/offshore MPA boarder at the Santa Barbara Island MPA to a straight line between two points of latitude and longitude versus the original boarder being the 1 nautical mile line from the island. The reason for this change is to align to the MPA design criteria set in the MLPA which states to not use odd shapes or curves, only straight lines between tenth or whole minute latitudes and longitudes. (Located on page 3, 19, and 20)
- Modification of how deep-set-buoy-gear (DSBG) will be considered in the petition. Currently DSBG is only a federal fishery and still in its EFP stage at the State level, consideration of its allowance inside the state waters of MPAs will remain pending with the FGC and CDFW until DSBG is a state fishery. Until then, only a federal process may allow DSBG in the federal portions of the MPAs. Therefore, DSBG has been isolated from all of the options, now having its own action section due to the unique case of that process. (Located on page 4, 16, and 17)

Additional stakeholder feedback/rationale being added:

- Commercial swordfish gear(s) uncontrollable movement into primarily these MPAs, per MDFE effort data, poses problems that must be resolved. (Located on pages 11-13)
- Naval closures local to the Channel Islands restricting most offshore fishing opportunity except near two of the petition MPAs. (Located on page 13)
- Additional information pertaining to adaptive management, the MPA Master Plans (2008 and 2016), the MLPA, and climate resiliency in the scope of this specific petition. (Located on pages 14-15)



Tracking Number: **(2023-24MPA-AM1)**

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Laguna Bluebelt Coalition

Name of primary contact person: Mike Beanan

Address: [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.

3. Overview (Required) -

- a. Extend the Laguna Beach SMCA no-take regulation down to the southern border of the City of Laguna Beach. This area is currently covered by the Dana Point SMCA, which only protects tide pool resources, not the offshore kelp beds.

4. Rationale (Required) -

The revised Petition is based upon input from the Orange County Marine Protected Area Collaborative (OCMPAC) and enforcement recommendations from participants. The revised Petition locates the southern No Take SMCA border to follow one East/West latitude line to facilitate a consistent offshore boundary. Laguna Beach has recently taken over enforcement of the South Laguna beaches all the way down to the City border. ~~Right now there is confusion due to the different regulations within one city.~~

This regulation change will make enforcement easier and more consistent because it will create continuity within the city, where the same rules apply to all beaches. All Laguna Beach lifeguards have received MPO training and enforce no-take rules for the



rest of the city beaches. This will result in an increase in outreach and enforcement effectiveness, which supports priority recommendation number 15.

High fishing and lobstering pressure are taking a toll on the remaining kelp beds in South Laguna due to overharvesting and substrate degradation possibly due to anchor chain drag. The Sustainable Fisheries Act of 1996 established new requirements for fishery management councils to identify and describe Essential Fish Habitat and to protect, conserve, and enhance these EFH for the benefit of fisheries. A 2002 update to these EFH regulations allowed fishery management councils to designate Habitat Areas of Particular Concern (HAPCs). HAPCs are considered high priority areas for conservation, management, or research because they are important to ecosystem function, sensitive to human activities, stressed by development, or are rare. The rocky reef and kelp beds in this particular area of South Laguna are slightly different than those in the rest of the city because of the steep drop of the cliffs into the ocean. This creates a unique microhabitat where water nutrients are mixed due to wave refraction off the cliffs.

There are kelp forests offshore in these areas that are desperately needed as habitat. One of the original design considerations for designating MPAs was to “Include within MPAs suitable rocky habitat containing abundant kelp and/or foliose algae” (CMLPA Master Plan for MPAs, Appendix F). ~~When the MPA boundaries were finalized in 2012, the kelp was at its highest extent of coverage since 1967 (see supplemental graph), so the total area of kelp forest was overestimated.~~ The kelp beds off South Laguna have been nearly decimated possibly by overharvesting and anchor chain drag and need to be protected. This, in combination with the potential for additional kelp decline due to warm water and recent wildfire events makes it imperative that we protect as much as possible. The Science Advisory Team (SAT) determined Laguna Beach’s MPA to be the minimum size for success.

The Marine Mammal Protection Act also requires action to be taken here. The south end of the no-take SMCA is visible from shore as a line of lobster trap buoys extending out from the cliffs and beach. One MPA watch volunteer reported 223 buoys off of Table Rock beach on 11/8/2023. This represents a virtual “wall” of dangerous trap lines that interrupt whale migration paths. Whales have been seen frequently traveling very close to shore along this stretch of coastline (see supplemental photo of Thousand Steps beach). A December 2019, [Men's Journal](#) magazine article stated that in the preceding few weeks Dana Point Boat captains had logged more than 40 sightings of gray whale cow-calf pairs in the shallow coves of Laguna Beach. The lobster buoy lines likely create a dangerous obstacle for migrating whales, which are protected under the MMPA.

Residents in South Laguna support the extension of the no-take SMCA as evidenced by the attached letters of support from the Three Arch Bay Community Services District, Orange County Coastkeeper, Laguna Canyon Conservancy, Laguna Bluebelt Coalition, and the South Laguna Civic Association. They feel that it is not equitable to have only the north and central beaches protected. Please see the attached letters of support. The



Laguna Beach City Council also supports further analysis and participation in the process.

SECTION II: Optional Information

5. **Date of Petition:** 11/29/2023 **AMENDED 03/11/2025**
6. **Category of Proposed Change**
☐ Sport Fishing
☐ Commercial Fishing
☐ Hunting
☒ Other, please specify: MPAs, Section 632.
7. **The proposal is to:** *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*
☒ Amend Title 14 Section(s): [Westlaw regulations](#).
☐ Add New Title 14 Section(s): [Click here to enter text](#).
☐ Repeal Title 14 Section(s): [Click here to enter text](#).
8. **If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition**
Or ☒ Not applicable.
9. **Effective date:** If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency:
This should be implemented as soon as possible. Ancient California Gray Whale Migration is currently being altered due to proliferation of nearshore lobster traps and rope buoys at the southern SMCA boundary.
10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents:
(A) Map of proposed Boundary Adjustment.
(B) Letter of support from the Three Arch Bay Community Services District
(C) Letter of support from the South Laguna Civic Association
(D) Letter of support from the Laguna Bluebelt Coalition
(E) Letter of support from Orange County Coastkeeper
(F) Letter of support from the Laguna Canyon Conservancy
(G) ~~Graphic from "Status of the Kelp Beds in 2019: Orange & San Diego Counties. Prepared for the Region Nine Kelp Survey Consortium" by MBC Aquatic Sciences~~
(H) ~~Full Report: "Status of the Kelp Beds in 2019"~~
(I) Photo of gray whale at Thousand Steps Beach
11. **Economic or Fiscal Impacts:** Although no socioeconomic data is provided, there may be a fiscal impact on commercial lobster fishers due to reducing their fishing grounds. However, fishing effort will be closer to Dana Point Harbor to save fuel costs and use of ropeless buoys will be encouraged. With removal of lobster buoy lines as migration barriers, whale watching



tours can resume in Laguna Beach (\$10 million estimated annual revenues to Dana Point economy). Less anchoring by CPFVs will reduce anchor chain drag damaging local reefs and kelp forests. ~~Estimated resident property values gain an increase of 20% from proximity to a fully protected MPA~~

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received: **March 11, 2025**

FGC staff action:

- ☐ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
- ☐ Granted for consideration of regulation change

Tracking Number

Revised Boundary Map



Symbology

- City Limits
- SOCWA Effluent Transmission Line
- SOCWA Ocean Outfall
- Proposed Laguna Beach SMCA (No-Take) Adjustment

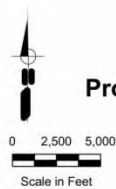
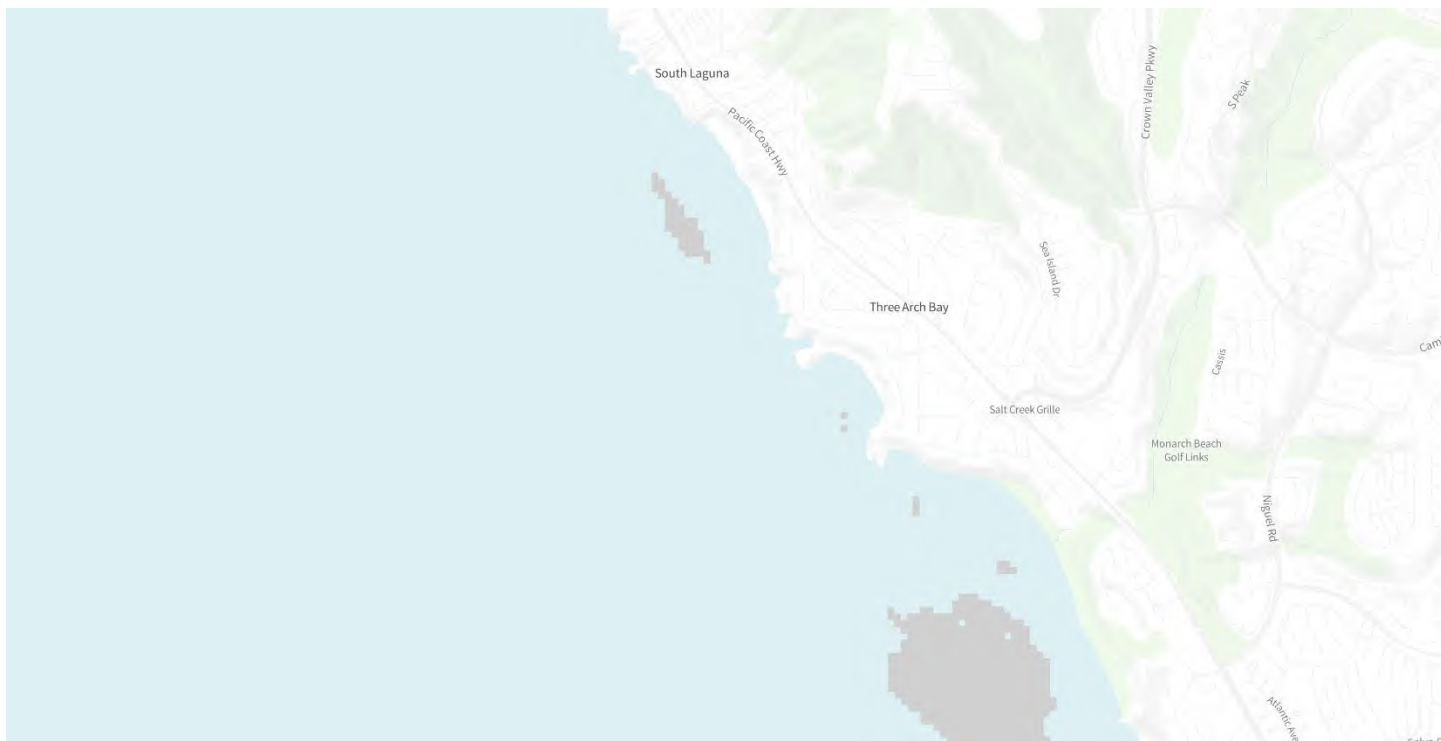


Figure 1
City of Laguna Beach
Proposed Marine Protected Area Adjustment

Laguna Bluebelt Coalition
MPA Decadal Review



Proposed SMCA No Take Rocky Kelp Substrate at Thousand Steps Reef – KelpWatch.org





Proposed SMCA No Take Rocky Kelp Substrate at Thousand Steps Reef – KelpWatch.org





California Fish and Game Commission
Marine Resources Committee
fgc@fgc.ca.gov

January 7, 2025

Subject: Revision to Laguna Bluebelt Coalition Petition 2023-24 MPA

Commissioners and Staff,

The Laguna Bluebelt Coalition seeks to revise the southern boundary for Petition 2023-24MPA to a No Take SMCA (State Marine Conservation Area) for citywide enforcement consistency and protection of essential sea life habitat between Palos Verdes and La Jolla MPAs.

The proposed revised No Take SMCA is within the jurisdiction of the City of Laguna Beach and has widespread support from community organizations and the City's Environmental and Sustainability Committee. Community support includes the South Laguna Civic Association, Three Arch Bay Service District, Village Laguna, Laguna Canyon Conservancy, Project O, OC Coastkeeper and many individuals.

The City of Laguna Beach has submitted multiple letters seeking to participate in processing the Laguna Bluebelt Petition. In a December 10, 2024 letter to the Commission, Laguna Beach Mayor Rounaghi emphasized the "City looks forward to reviewing the State's assessment of Petition 2023-24 MPA" and "The City remains committed to actively participate and providing informed input...".

Presently, the southern area of Laguna Beach is inaccurately designated as within the Dana Point SMCA leading to confusion about place names and take regulations. The Petition will simplify the no take regulation for the entire city of Laguna Beach, address inaccurate place names and restore Laguna Beach as the correct jurisdiction for this area. The revised No Take SMCA boundary will be identified by the prominent bluff top outcropping at Three Arch Bay consistent with the Laguna Beach City Limits.

The Petition reflects the MLPA's Adaptive Management Objectives to:

- Protect the structure and function of marine ecosystems
- Improve native marine life populations, including those of economic value
- Ensure minimal disturbance while allowing for sustainable opportunities for recreation, education and research
- Ensure comprehensive representation of all key habitats, including unique habitats
- Use learning acquired through administration of the MLPP to adaptively manage the objectives, management measures, enforcement efforts, and scientific guidelines to inform management decisions
- MPAs function as a cohesive statewide network

Size and Spacing Considerations

The Science Advisory Team (SAT) spacing requirements determined Laguna Beach is an essential linkage for larval dispersal among Southern California's MPAs. Guidelines set a maximum distance and minimum size for each MPA.

Maximum Shoreline Distance: To ensure the persistence of a suite of species in an MPA network, the maximum distance between MPAs was determined to be within 50 -100 km (31 -62 miles). A network of MPAs 20 km (12 miles) in length met the upper boundary of the preferred size guidelines and led to population persistence for a larger set of movement combinations. With MPAs this large, decreasing spacing produced a more substantial effect. MPAs of 20 km (12 mile) shoreline length protected a much larger range of movement combinations when spaced 50 km (31 miles) apart (51.8%) than when spaced 100 km apart (21.6%). This increase occurred because persistence of populations with large mean larval dispersal was maintained through a network effect, rather than self-persistence. Laguna Beach's MPAs maximum distance are 50 miles from Palos Verdes MPAs and 72 miles from La Jolla MPAs to meet this goal.

In summary, bigger MPAs yield better results for protecting marine life. Laguna Beach is an excellent candidate when you combine community support and the City's present MPA enforcement measures to be able to achieve noteworthy success.

Minimum Alongshore Extent: To best protect adult populations, based on adult neighborhood sizes and movement patterns, Guidelines conclude MPAs should have an alongshore extent of at least 3-6 miles of coastline, and preferably 6-12.5 miles. Larger MPAs would be needed to fully protect marine birds, mammals, and migratory fish. Combined and simplified, the Guideline indicates that MPAs should have a minimum area of 9-18 square miles, or a preferred area of 18-36 square miles.

The Revised Petition to include full protection of all of Laguna Beach's MPAs is necessary to comply with SAT Guidelines since, once approved, it will protect 7 miles of coastline slightly within the preferred alongshore extent (6-12 miles). A fully protected Laguna MPA will also grow to 11 square miles, the minimum preferred area (9-18 square miles).

Once approved, the citywide and a fully protected MPA will comply with SAT Guidelines for preferred coastline and size. This will be complimented by local, well-established education and enforcement capabilities to support the continued success for Laguna Beach's MPAs.


Stakeholder Collaboration

The Laguna Bluebelt Coalition, a statewide model for MPA Collaboratives since 2009, has met with key stakeholders through OCMFAC including fishing groups, tribal representatives, game wardens and others to revise Petition 2023-24MPA to accommodate the local lobster fishery. By adjusting the southern SMCA to follow the east/west latitude line at the request of the Dana Point lobster group, placement of lobster traps is facilitated by a consistent GPS latitude line to avoid encroachment into the proposed southern Laguna Beach No Take SMCA.

Revised Boundary Map



Symbology

- City Limits
- - - SOCWA Effluent Transmission Line
- - - SOCWA Ocean Outfall
-  Proposed Laguna Beach SMCA (No-Take) Adjustment

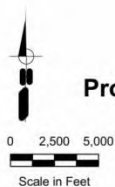


Figure 1
City of Laguna Beach
Proposed Marine Protected Area Adjustment

Laguna Bluebelt Coalition
 MPA Decadal Review

Economic Considerations

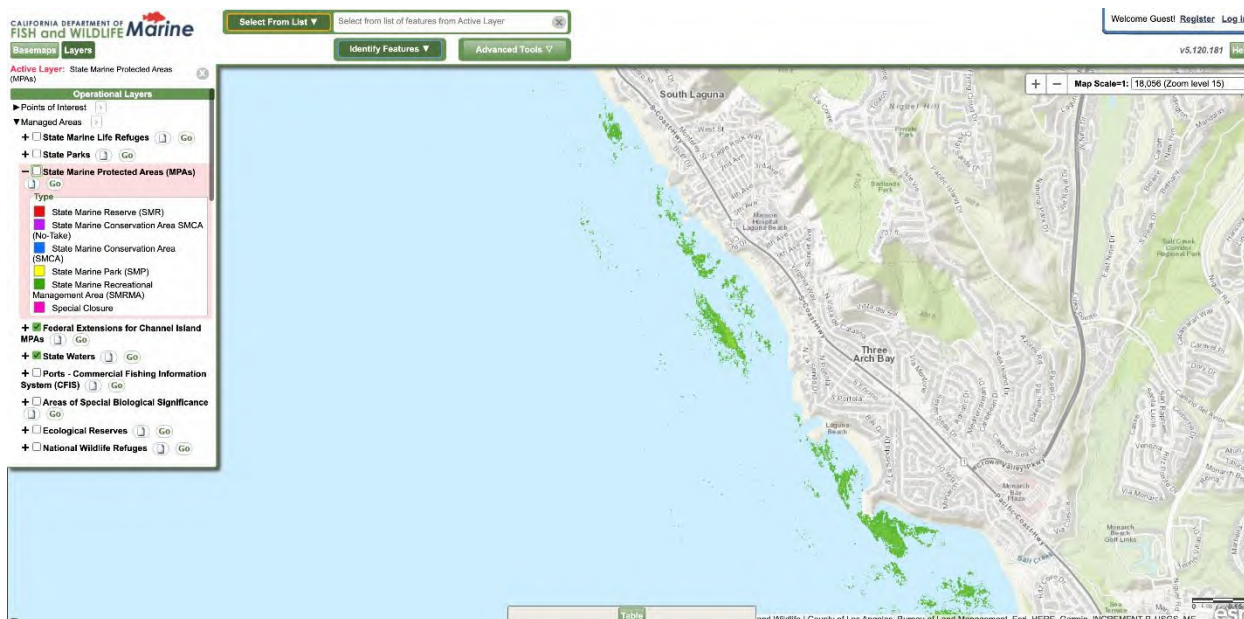
While commercial fishing businesses generally object to MPAs, it is worth noting that Dana Wharf has shifted operations away from fishing to pursue new economic opportunities as the Whale and Dolphin Watching Capital of the World – America’s first Whale Heritage Site. The designation of just over 1 square mile of a new No Take SMCA is just a fraction of the present Dana Wharf fishing grounds and will not measurably impact their annual sportfishing and whale tour revenues. Dana Wharf presently operates large fishing grounds spanning hundreds of square miles from Dana Point south to Camp Pendleton and west to Catalina and San Clemente Islands.

See: [The Ultimate Guide To Fishing In Dana Point, CA | Dana Wharf](#)

Essential Marine Habitats

With steep coastal bluffs, isolated coves and offshore reefs, Laguna Beach’s southern coastline provides unique habitats for coastal sea life nurseries. Kelp forests populate local reefs throughout the city while dolphin and whales routinely transit the area for foraging opportunities and annual migration.

Laguna Beach’s Essential Kelp Habitat



The City of Laguna Beach has a long ocean tradition and is committed to protecting marine resources. All Marine Safety Lifeguards are qualified as Marine Protection Officers to maintain a robust education and enforcement program.

The Laguna Beach General Plan and Policies recognize the value of coastal resources (see References).

The success of Laguna’s Marine Protected Areas over the past 12 years is clear evidence that sea life can be protected and restored in an urban environment. The City’s commitment to manage over 6 million visitors continues to educate and motivate compliance with all MPA regulations and policies. Revising

the southern SMCA boundary for full citywide protection will support the community's dedication to achieve the goals and objectives of the State's Marine Life Protection Act.

The Laguna Bluebelt Coalition appreciates the dedicated role of the Fish and Game Commission to serve as a global leader in advancing the State's recovery of sea life for present and future generations.

Mike Beanan

w/Laguna Bluebelt Coalition



Julianne E Steers, Sargo School

References

Laguna Beach General Plan and Policies

Action 1.1.1 Protect natural assets and open-space areas to maintain their role as “carbon sinks.”

Policy 4.1 Policy 4.2 Develop and adopt a program to protect sensitive coastal resources.

Action 4.1.1 Compile an inventory of the City’s coastal resources and prepare a Coastal Resources Protection Program.

Action 4.2.2 Enforce State’s Marine Life Management Act and identified Marine Life Protected areas within the City and local regulations for the protection of marine life and intertidal resources and to conduct educational and outreach programs.

Action 10.7.2 Periodically review the City’s Water Quality Control Ordinance and related policies for protecting marine resources and update as appropriate.

In cooperation with the State Department of Fish and Game, a Marine Preserve was created by the State in 1968 for a portion of the City’s shoreline particularly rich in tidepool life. In addition to the Marine Preserve, the State, in conjunction with the City, established an Ecological Reserve in 1974, creating, in essence, a marine sanctuary, or a protected “aquarium”.

Policies 2-A Encourage the expansion of the Marine Life Refuges and the designation of particularly unique or ecologically sensitive coastal areas as Ecological Reserves (such as seal and bird rocks), pursuant to the provisions of the State Department of Fish and Game.

2-F Develop a local enforcement program, pending funding availability, consisting of shoreline protection regulations and citation authority for Marine Safety personnel.

2-H Support restoration of offshore kelp beds.

41 Watershed Protection and Restoration Promote the protection and restoration of offshore, coastal, lake, stream or wetland waters and habitats and preserve them to the maximum extent practicable in their natural state. Oppose activities that may degrade the quality of offshore, coastal, lake, stream or wetland waters and habitat and promote the rehabilitation of impaired waters and habitat.

Develop an enforcement program for the protection of marine life resources.

Promote an expanded Marine Life Refuge.

Marine Resources: A small estuary occurs at the mouth of Aliso Creek. As recently as 1976 this estuary supported the Tidewater Goby, a species considered uncommon and declining in numbers due to habitat loss. A resource inventory included in the Orange County Conservation Element identifies the presence of the South Laguna Marine Life Refuge in the South Laguna area. The refuge, near the mouth of Aliso Creek, was given refuge status by the California Fish and Game Commission because the animal

populations in the rocky intertidal habitat had not been subjected to the collecting pressures that had occurred in other areas along the south coast.

From: Mike Beanan <[REDACTED]>
Sent: Friday, March 14, 2025 10:41 AM
To: FGC <FGC@fgc.ca.gov>
Cc: Ashcraft, Susan@FGC <[REDACTED]>
Subject: Petition 2023-24-R

Hi,

Please add my comments for the record in evaluating Petition 2023-24-R.

Thank you,

Mike Beanan

Laguna Bluebelt Coalition

[Laguna Bluebelt - Working Together for a Healthy Ocean](#)

Working Together for a Healthy Ocean. Support our New Marine Reserves Your support is critical if they are to succeed.

www.lagunabluebelt.com

Mike Beanan, Co-founder, Laguna Beach Coalition

Thank you for including us in the process to evaluate and, hopefully, approve Petition 2023-24-R to protect all of Laguna Beach's Marine Life.

Based upon stakeholder input, we have submitted a Revised Petition offered as a compromise to support and ease near shore enforcement along one, common latitude line. The original petition followed Laguna Beach's City Limits extending southwesterly from the shoreline. This made the determination of the offshore boundary difficult according to participants at a recent stakeholder meeting hosted by the Orange County Marine Protected Area Collaborative in Dana Point. While there is some debate about who made the suggestion, which led to an unfortunate misunderstanding, the revised petition before you is a smaller SMCA No Take than originally requested but still protects kelp and essential fish habitats.

When evaluating the Petitions, I suggest we comply with and enhance the goals of the Marine Management Plan by increasing the coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage with full citywide protection. Fortunately, Laguna's unique MPAs have dramatically improved

recreational, educational and study opportunities provided by marine ecosystems through coordinated enforcement by Marine Safety Lifeguards, Park Rangers and community volunteers working together to minimize human disturbance. Petition 2023-4-R is consistent with all of the goals for the Marine Management Act and legislative intent of the Marine Life Protection Act of 1999.

I am not unfamiliar with economic challenges. I grew up in a large working class family in Northern California surfing the cold, wild waves while diving for abalone with my brothers off of Gualala and Mendocino or fishing mountain lakes. Leaving high school and to avoid the draft, I joined the Navy, studied navigation and was assigned to SEAL Team One, as a Platoon Sergeant and sent to Vietnam. Turning 21, I got out, worked my way through college and earned a degree in Biology before being hired as Assistant Dean at UC Irvine to manage veteran programs. One of my first projects was a pioneering Handicapped Scuba Project for wheelchair veterans and others...now a worldwide opportunity for the physically challenged community to enjoy and explore underwater wonders.

I continue now to swim and free dive Laguna's remarkable MPAs while traveling and Scuba diving other MPAs. I encourage FGC staff and commissioners to visit and swim Laguna's MPA and see large Sheepshead and robust kelp forests free of sea urchin barrens.

As a Californian, I feel an opportunity and responsibility to protect and restore our natural heritage - an abundant ocean teeming with sea life. Please consider approving the Laguna Bluebelt's Petition 2023-24-R as part of your legacy for California's sea life protection.



ORIGINAL PETITION



Symbology

- City Limits
- - - SOCWA Effluent Transmission Line
- SOCWA Ocean Outfall
- Proposed Laguna Beach SMCA (No-Take) Adjustment

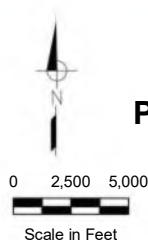


Figure 1

City of Laguna Beach Proposed Marine Protected Area Adjustment

Laguna Bluebelt Coalition
MPA Decadal Review



Tim Duong for DanaWharf.com



P.O. BOX 9668
SOUTH LAGUNA, CA
92652-7639
southlaguna.org

August 29, 2023

Commissioners and Staff,

Since 2012, with the implementation of the California Marine Life Protection Act of 1999, Laguna Beach has successfully managed a network of Marine Protected Areas as a statewide model of collaboration and appreciates the support of the Fish & Game Commission in that effort.

On the heels of annexation of South Laguna beaches coming under the purview of the City of Laguna Beach on March 1, 2023, we are requesting an expansion of the “No Take SMCA” provisions to extend throughout all Laguna Beach MPAs. In addition to alignment with Laguna Beach’s commitment to the national “30 x 30 Initiative Plan” to conserve 30% of America's land and waters by 2030, a citywide “No Take” provision will provide enforcement consistency and community equity while protecting South Laguna kelp reefs – key to carbon sequestration, rising sea temperatures and attenuating bluff erosion.

Multiple benefits will accompany extending the Laguna Beach No Take MPA from 7.2 to 7.9 miles: from Aliso Beach and Totuava Cove through Three Arch Bay (TAB) southwest to the Laguna Beach city limit, see attached map. TAB has exceptional nursery beds for marine life in its bays that are not protected under our current MPAs. For this reason, coupled with the decimating impacts of over-fishing in the unprotected SMCA along TAB during the past 10 years, the TAB Community Services District requested in May 2023 that California Fish and Wildlife Commission extend the No Take MPA through “the southernmost point of the city of Laguna Beach – Mussel Cove, also known as Three Arch Bay.”

The Laguna Bluebelt Coalition, Laguna Ocean Foundation through their education and outreach programs, the City of Laguna Beach’s Environmental Sustainability Committee, and the enthusiastic 100% support and collaboration of our City Council and Marine Safety Department have enabled us to be strong watchdogs and local stewards of our MPAs. Together, we have focused on habitat restoration, water-quality education, wildlife and resource protection, and networking.

Laguna Beach’s rocky coastline has been scientifically determined to provide ideal tidepool and kelp forest habitats as a vital genetic linkage for marine life between the Palos Verde Peninsula and La Jolla Cove. No Take MPAs in Laguna Beach have created increased sea life populations, support an expanding variety of ecotourism recreational opportunities, and have proven to be essential to mitigating decades of over-fishing.

Citywide MPA consistency will further improve ocean water quality by reducing harmful greenhouse gas emissions from fishing boats traveling from Dana Point to Laguna Beach.

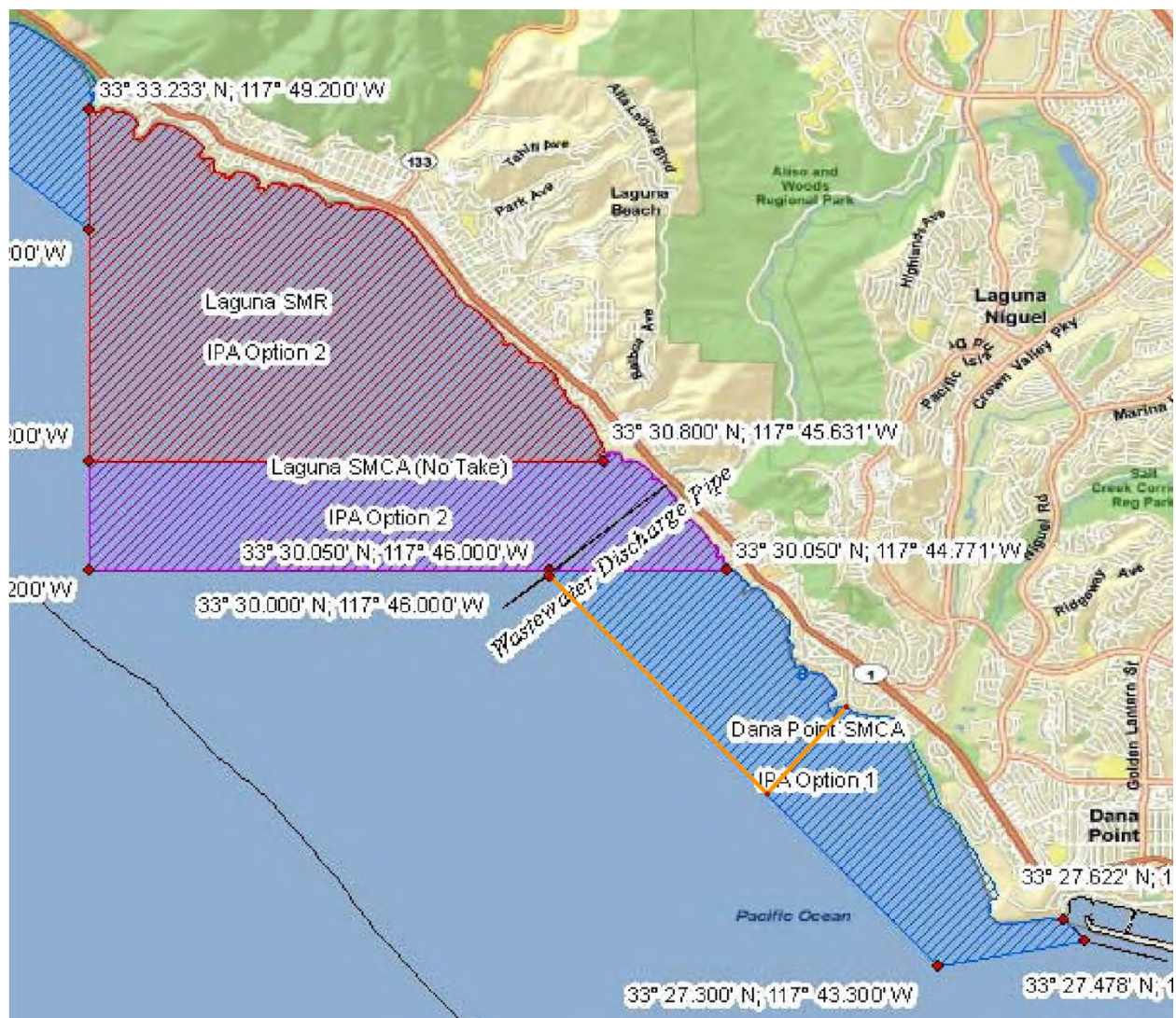
Climate change science recognizes the ocean as key to reversing negative anthropogenic climate impacts.

Thank you for your support of Laguna's Marine Protected Areas and for your consideration of an expansion of the network of No Take MPAs citywide which will increase protections to California's sea life populations and habitat value while benefitting us all.



Greg O'Loughlin, President
South Laguna Civic Association

Orange outline indicates the proposed No Take MPA extension to Laguna Beach's southern boundary.





P.O. Box 1383, Laguna Beach, CA 92652 • www.LagunaCanyonConservancy.org

November 22, 2023

California Fish and Wildlife Commission
P.O. Box 944209
Sacramento, CA 94244-2090
Via email: fgc@fgc.ca.gov

RE: Support for Extending Laguna Beach's Southern MPA Boundary

Dear Commissioners,

The Board of Directors of the Laguna Canyon Conservancy (LCC) joins with our local environmental colleagues and organizations in support of extending the Marine Protected Areas at the southern end of Laguna Beach.

LCC believes a revision is vital to ensuring an increase in protection of California's sea life populations and ecosystems, as well as enforcing consistency of rules and regulations, along with community equity. It is also important to achieve the City of Laguna Beach's 30 x 30 contribution to protect 30% of the world's coastal marine areas by 2030.

As stewards of our wilderness, we hope the Commission will support the goals and requests of Laguna Beach's environmental groups to expand the network of No Take MPAs citywide and protect our coastal environment for present and future generations to come. Thank you in advance for making this critical step forward.

Laguna Canyon Conservancy is a non-profit, all-volunteer environmental organization founded in 1988 to Save and Protect Laguna Canyon. LCC members have been involved in expanding the South Coast Wilderness nature reserves of Orange County that now include over 22,000 acres of parks, open space, and marine preserves. For more information, please visit:

www.LagunaCanyonConservancy.org

Sincerely,

A handwritten signature in black ink, appearing to read "Gayle Waite", written in a cursive style.

Gayle Waite
President, Laguna Canyon Conservancy

Cc: City Council of Laguna Beach
Jeremy Frimond, Assistant City Manager

March 9, 2023

California Fish and Wildlife Commission
P.O. Box 944209
Sacramento, CA 94244-2090
fgc@fgc.ca.gov



**RE: Letter of Support for Citywide "No Take"
Marine Protected Areas (SMR and SMCA) in Laguna Beach, Orange County, California**

Commissioners and Staff,

With the implementation of the California Marine Life Protection Act of 1999, Laguna Beach has successfully managed a network of MPAs as a statewide model of collaboration, education and enforcement. To provide citywide enforcement consistency, the Laguna Bluebelt Coalition requests extending "no take" provisions to include all of Laguna Beach's State Marine Conservation Areas (SMCAs) to the southern City Limits.

Laguna Beach's rocky coastline has been scientifically determined to provide ideal tidepool and kelp forest habitats as a vital genetic linkage for marine life between the Palos Verde Peninsula and La Jolla Cove. The City of Laguna Beach continues to benefit economically and ecologically from Marine Protected Areas with experienced Marine Protection Officers (MPOs), community vigilance, marine life education and comprehensive fishing restrictions.

The South Laguna SMCA is characterized by steep bluffs and compact coves to create a unique coastal ecology with tide pools, deep rocks and kelp forests. Wave action and backwash energy from bluffs surrounded by offshore kelp forests offers a local mixing zone for marine mammal and sealife foraging. Annual migrations of California Gray Whales often use South Laguna Coves as a rest stop for mothers and calves. Laguna Beach's other No Take MPAs have increased sea life populations and currently support a variety of ecotourism recreational opportunities.

While most of Laguna Beach restricts fishing, South Laguna is a designated State Marine Conservation Area allowing recreational and commercial fishing. Daily, concentrated fishing effort in the South Laguna SMCA has unfortunately contributed to over-fishing during the past ten years by recreational fishers and commercial passenger fishing vessels (CPFVs). Expansion of Laguna Beach's MPAs is essential to mitigate decades of regional over-fishing.

Expanding "No Take" provisions for all City MPAs will contribute to the City's commitment to the national "30 x 30 Initiative Plan" to conserve 30% of America's land and waters by 2030. The March 1, 2023 annexation of South Laguna beach areas by the City of Laguna Beach requires "No Take" provisions for the South Laguna SMCA to provide citywide enforcement consistency and community equity.

Climate change science recognizes the ocean as key to reversing negative anthropogenic climate impacts and the City of Laguna Beach is committed to a Climate Action Plan. Citywide MPA enforcement

consistency will improve ocean water quality by reducing harmful greenhouse gas emissions from commercial fishing boats traveling far from Dana Point to fish in South Laguna.

The City Council proudly supports the Marine Protected Areas and City policies encourage expanding marine life refuges.

Thank you for your dedicated efforts to protect California's marine life and for considering our request to extend citywide "No Take" protection for all of Laguna Beach's MPAs.

Mike Beanan
Laguna Bluebelt Coalition

<https://www.lagunabluebelt.com/>

References:

<https://www.lagunabeachcity.net/home/showpublisheddocument/8148/637406985535730000>

City of Laguna Beach: Tide Pools and Marine Habitats

2A Encourage the expansion of the Marine Life Refuges and the designation of particularly unique or ecologically sensitive coastal areas as Ecological Reserves (such as seal and bird rocks), pursuant to the provisions of the State Department of Fish and Game.



3151 Airway Ave, Suite F-110
Costa Mesa, CA 92626
714-850-1965
www.coastkeeper.org

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Support for Laguna Bluebelt Coalition Petition to extend the no-take SMCA to the southern boundary of the City of Laguna Beach

Dear President Sklar and Commissioners,

OC Coastkeeper has the mission to protect swimmable, drinkable, fishable water and promote watershed resilience throughout our region. We have been actively working to support and implement Marine Protected Areas since the passage of the Marine Life Protection Act. We support the Laguna Bluebelt Coalition's petition regarding an extension of the Laguna Beach no-take SMCA boundary to the southern border of the city and urge you to approve this proposed boundary change.

Orange County beaches have some of the most beautiful beaches and coves found anywhere in the world. Visitation is high, and therefore the protection offered by the MPAs is vital. Most of the city is protected by the Laguna Beach State Marine Reserve (SMR) and the Laguna Beach no-take State Marine Conservation Area (SMCA). However, there is a stretch of coastline that lies within the city limits that does not receive the same level of protection. Commercial and recreational fishing is permitted in these waters and residents are alarmed by the amount of fishing and the number of lobster traps that they see regularly. This area of the coastline has not been sufficiently studied to get scientific data on the impact of fishing, but local residents that spend substantial time in the water have noted a decrease in fish in the unprotected area.

These coves support vital kelp forest habitat, which is on the decline across the state. The rocky substrate that supports the kelp as well as the fish and invertebrates that utilize the kelp are impacted by lobster traps and anchors. The kelp is still present, but now fails to reach the surface. We must protect this habitat while it still has the ability to come back.

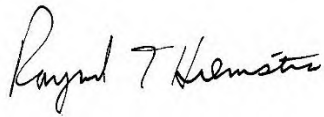
Another concern in this area is the whale migration route. Whales frequently come in close to the shore through Laguna Beach on their migration to and from the calving and breeding grounds in Baja California. During Lobster season, the whales run into a virtual wall of lobster ropes and buoys, which pose a serious threat to entanglement.

Extension of the no take SMCA boundary south will assist enforcement of MPA regulations by making the entire City of Laguna Beach a no take zone. The City of Laguna Beach has recently taken over management of all of the beaches in the city. Until last summer, the County of Orange was in charge of managing all of the beaches south of Aliso Creek. Now that

beach management is consistent throughout the city, the MPA rules should be consistent as well. This will make it easier for the public to identify where they can and can't fish, and for enforcement officers to do their job.

To help MPA enforcement, protect whales, and preserve the remaining kelp beds, we urge the commission **to extend the no-take SMCA boundary to coincide with the southern boundary of the City of Laguna Beach.** We enthusiastically support California's MPA Network and believe the MPAs are working to preserve biodiversity. In the case of Laguna Beach, the MPA extension will enhance the protection of vital ecosystems and create a more consistent and cohesive enforcement policy.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond T. Helmuth". The signature is fluid and cursive, with the first name "Raymond" being more prominent than the last name "Helmuth".

Associate Director of Policy and Projects



THREE ARCH BAY
COMMUNITY SERVICES DISTRICT
5 BAY DRIVE, LAGUNA BEACH, CALIFORNIA 92651-6780
(949) 499-4567 FAX: (949) 499-2352

May 1, 2023

California Fish and Wildlife Commission

P.O. Box 944209

Sacramento, CA 94244-2090

fgc@fgc.ca.gov

RE: Letter of Support for Laguna Beach City-wide Marine Protected Areas including South Laguna, to the Southern Point of Mussel Cove, Orange County, California

Dear Commissioners,

Since 2012, with the implementation of the California Marine Life Protection Act of 1999, Laguna Beach has successfully managed a network of Marine Protected Areas (MPAs) as a statewide model of collaboration, education and enforcement. To provide marine protection consistently throughout all of Laguna Beach, the Community Services District of Three Arch Bay supports an extension of marine protection via "no take" Marine Conservation Areas (SMCAs) to the point at the end of Mussel Cove, which is the southern border of Laguna Beach, in the community of Three Arch Bay (TAB).

Laguna Beach's rocky coastline has been scientifically determined to provide ideal tidepool and kelp forest habitats as a vital genetic linkage for marine life between the Palos Verde Peninsula and La Jolla Cove. The City of Laguna Beach continues to benefit economically and ecologically from Marine Protected Areas.

Three Arch Bay (TAB), which includes Mussel Cove, in South Laguna's SMCA, is characterized by steep bluffs and compact coves that create a unique coastal ecology with tide pools, deep rocks and kelp forests. Wave action and backwash energy from bluffs surrounded by offshore kelp forests offers a local mixing zone for marine mammal and sea life foraging.

While most of Laguna Beach restricts fishing, the southern end of Laguna Beach was only designated a State Marine Conservation Area, which allows continued recreational and commercial fishing. Unfortunately, the over-fishing during the past ten years by commercial and recreational fishermen, including commercial passenger fishing vessels (CPFVs), has devastated the kelp beds, fish population, and sea life across South Laguna. Expansion of Laguna Beach's MPAs is essential to mitigate decades of regional over-fishing particularly in South Laguna.

Thus, we request that you initiate and vote to provide an extended "no take" Marine Protected Area (SMR and SMCA) Citywide, across Laguna Beach, including South Laguna, to the Southern Point of Mussel Cove, Orange County, California. This would extend the existing marine protections throughout Laguna Beach, including the southernmost point of the city of Laguna Beach – Mussel Cove, also known as Three Arch Bay.

As a community, we are active stewards of our waterways and marine resources, ensuring quality management of our natural resources, and would appreciate the state's support of our efforts by extending the MPA to the Southern end of Laguna Beach.

Thank you,



Gary Rubel
President
Three Arch Bay Community Services District

Cc: City of Laguna Beach
Board Members of the TAB CSD



California Fish and Game Commission
Marine Resources Committee
fgc@fgc.ca.gov

January 7, 2025

Subject: Revision to Laguna Bluebelt Coalition Petition 2023-24 MPA

Commissioners and Staff,

The Laguna Bluebelt Coalition seeks to revise the southern boundary for Petition 2023-24MPA to a No Take SMCA (State Marine Conservation Area) for citywide enforcement consistency and protection of essential sea life habitat between Palos Verdes and La Jolla MPAs.

The proposed revised No Take SMCA is within the jurisdiction of the City of Laguna Beach and has widespread support from community organizations and the City's Environmental and Sustainability Committee. Community support includes the South Laguna Civic Association, Three Arch Bay Service District, Village Laguna, Laguna Canyon Conservancy, Project O, OC Coastkeeper and many individuals.

The City of Laguna Beach has submitted multiple letters seeking to participate in processing the Laguna Bluebelt Petition. In a December 10, 2024 letter to the Commission, Laguna Beach Mayor Rounaghi emphasized the "City looks forward to reviewing the State's assessment of Petition 2023-24 MPA" and "The City remains committed to actively participate and providing informed input...".

Presently, the southern area of Laguna Beach is inaccurately designated as within the Dana Point SMCA leading to confusion about place names and take regulations. The Petition will simplify the no take regulation for the entire city of Laguna Beach, address inaccurate place names and restore Laguna Beach as the correct jurisdiction for this area. The revised No Take SMCA boundary will be identified by the prominent bluff top outcropping at Three Arch Bay consistent with the Laguna Beach City Limits.

The Petition reflects the MLPA's Adaptive Management Objectives to:

- Protect the structure and function of marine ecosystems
- Improve native marine life populations, including those of economic value
- Ensure minimal disturbance while allowing for sustainable opportunities for recreation, education and research
- Ensure comprehensive representation of all key habitats, including unique habitats
- Use learning acquired through administration of the MLPP to adaptively manage the objectives, management measures, enforcement efforts, and scientific guidelines to inform management decisions
- MPAs function as a cohesive statewide network

Size and Spacing Considerations

The Science Advisory Team (SAT) spacing requirements determined Laguna Beach is an essential linkage for larval dispersal among Southern California's MPAs. Guidelines set a maximum distance and minimum size for each MPA.

Maximum Shoreline Distance: To ensure the persistence of a suite of species in an MPA network, the maximum distance between MPAs was determined to be within 50 -100 km (31 -62 miles). A network of MPAs 20 km (12 miles) in length met the upper boundary of the preferred size guidelines and led to population persistence for a larger set of movement combinations. With MPAs this large, decreasing spacing produced a more substantial effect. MPAs of 20 km (12 mile) shoreline length protected a much larger range of movement combinations when spaced 50 km (31 miles) apart (51.8%) than when spaced 100 km apart (21.6%). This increase occurred because persistence of populations with large mean larval dispersal was maintained through a network effect, rather than self-persistence. Laguna Beach's MPAs maximum distance are 50 miles from Palos Verdes MPAs and 72 miles from La Jolla MPAs to meet this goal.

In summary, bigger MPAs yield better results for protecting marine life. Laguna Beach is an excellent candidate when you combine community support and the City's present MPA enforcement measures to be able to achieve noteworthy success.

Minimum Alongshore Extent: To best protect adult populations, based on adult neighborhood sizes and movement patterns, Guidelines conclude MPAs should have an alongshore extent of at least 3-6 miles of coastline, and preferably 6-12.5 miles. Larger MPAs would be needed to fully protect marine birds, mammals, and migratory fish. Combined and simplified, the Guideline indicates that MPAs should have a minimum area of 9-18 square miles, or a preferred area of 18-36 square miles.

The Revised Petition to include full protection of all of Laguna Beach's MPAs is necessary to comply with SAT Guidelines since, once approved, it will protect 7 miles of coastline slightly within the preferred alongshore extent (6-12 miles). A fully protected Laguna MPA will also grow to 11 square miles, the minimum preferred area (9-18 square miles).

Once approved, the citywide and a fully protected MPA will comply with SAT Guidelines for preferred coastline and size. This will be complimented by local, well-established education and enforcement capabilities to support the continued success for Laguna Beach's MPAs.

Stakeholder Collaboration

The Laguna Bluebelt Coalition, a statewide model for MPA Collaboratives since 2009, has met with key stakeholders through OCMFAC including fishing groups, tribal representatives, game wardens and others to revise Petition 2023-24MPA to accommodate the local lobster fishery. By adjusting the southern SMCA to follow the east/west latitude line at the request of the Dana Point lobster group, placement of lobster traps is facilitated by a consistent GPS latitude line to avoid encroachment into the proposed southern Laguna Beach No Take SMCA.

Revised Boundary Map



Symbology

- City Limits
- - - SOCWA Effluent Transmission Line
- - - SOCWA Ocean Outfall
- ▨ Proposed Laguna Beach SMCA (No-Take) Adjustment

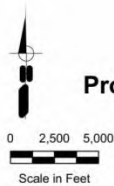


Figure 1
City of Laguna Beach
Proposed Marine Protected Area Adjustment

Laguna Bluebelt Coalition
MPA Decadal Review

March 14, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Submitted electronically to fgc@fgc.ca.gov

RE: Amendments to Petition 2023-28MPA: Point Sal State Marine Reserve

Dear President Zavaleta and Honorable Commissioners:

In November 2023, Natural Resources Defense Council (NRDC) submitted petition 2023-28MPA to the Fish and Game Commission (FGC) proposing a new marine protected area (MPA) off the coast of Point Sal, to be named Point Sal State Marine Reserve (SMR).

With the ecological significance of the area in mind, we proposed regulations for the Point Sal SMR that are aligned with current State Marine Reserves: *"It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource."* Given the historic and contemporary importance of the region to the Chumash people, we also recommended that the state consult with local Indigenous communities and Tribes before designation to determine whether a State Marine Conservation Area with exemptions for cultural and subsistence use of relevant Indigenous communities and Tribes in the area is warranted.

Since January 2024, we have conducted extensive outreach with community members and interested parties to discuss the proposal and gather additional insights and information. These conversations have improved our understanding of the Point Sal region and provided a greater appreciation of the historical and contemporary significance of the area for Chumash peoples. Our discussions with local communities, Tribal members, and Tribal organizations in particular, informed our decision to amend the original petition submitted to the FGC.

Our decision to amend Petition 2023-28MPA to allow recreational take of finfish by hook-and-line from shore is in recognition of: 1) the importance of this area for federally and non-federally recognized Chumash peoples, and 2) the importance of the area for shore-based subsistence and sport fishers. We support having the option to rename the Point Sal State Marine Conservation Area with a Chumash place name after further consultation with Chumash Tribes in the region. While we explored options for renaming the proposed SMCA, we were unable to affirmatively determine an appropriate Chumash name in time for the amendment deadline.

We hope this amendment, informed by the additional insight and information gathered through our outreach efforts with local communities and interested parties, encourages the Commission to support the proposed Point Sal SMCA.

Thank you for your consideration.

Sincerely,

Sandy Aylesworth
Director, Pacific Initiative, Nature
Natural Resources Defense Council

Bella Sullivan
Next Wave Fellow
Natural Resources Defense Council

Petition to Designate a New State Marine Reserve at Point Sal, Central California
PETITION NARRATIVE

Point Sal is located in Santa Barbara County, California, roughly 50 miles (80 kilometers) to the northwest of Point Conception. The nearest city to Point Sal is Guadalupe, located about six miles to the northeast, and Vandenberg Space Force Base is located to the south. Known for its scenic beauty, rugged cliffs, and stunning ocean views, Point Sal is a relatively remote and undeveloped area along California's coastline. Its waters are home to rich biodiversity, productive oceanographic features, and intact food webs that are worth protecting. This petition calls for the designation of a new ~~State Marine Reserve or~~ State Marine Conservation Area allowing for cultural and subsistence use by Tribes and Indigenous communities in this area, to advance the goals of California's network of marine protected areas (MPAs) in the face of climate change and threats from increased human activities and threats in the future.

Goals

The overall goals of this new MPA are to 1) protect this rich and productive ecosystem and the biodiversity found within, 2) to protect this larval retention zone and the connectivity dynamics within the region, and 3) to enhance the climate resilience of the broader state MPA network.

Proposed boundaries

In keeping with state MPA design and feasibility guidelines provided by CDFW, the proposed area is bounded by the mean high tide line and straight lines connecting the following points in the order listed:

- a. 34.880667518 N lat. 120.726433061 W long. (SW corner)
- b. 34.929894739 N lat. 120.727488272 W long (NW corner)
- c. 34.930008197 N lat. 120.666597401 W long. (NE corner)
- d. 34.880979714 N lat. 120.639473286 W long. (SE corner)

The proposed boundaries were drawn to align with visible landmarks and natural geographies as much as possible, with the northern boundary beginning at Mussel Point, and the southern boundary drawn at the end of Brown's Beach. The eastern boundary aligns with the mean high tide line, and the western boundary extends out to the edge of state waters as recommended by state feasibility guidelines.

The proposed area is 14.22 square miles with an alongshore span of 3.2 miles, which meets the state's minimum size guidelines and design recommendations. The proposed area is located 19 miles alongshore from Point Buchon SMR/SMCA, the nearest MPA to the north, which meets the state's minimum spacing recommendations, and 6.5 miles from Vandenberg SMR, the nearest MPA to the south.

Ecological significance of the area

The coastal waters around Point Sal in California support a diverse and dynamic marine ecosystem. The rocky coast is home to abundant and rich tidepools. The kelp beds found in waters leeward of the point provide habitat for endangered Southern sea otters and many other kelp-associated species. The rocks and coastal habitats around the point provide critical roosting and foraging habitats for multiple species of seabirds. State waters surrounding the point are home to a variety of feeding and migrating marine mammals, including bottlenose and common dolphins, harbor porpoises, humpback and gray whales, California sea lions, harbor seals, elephant seals, and Steller sea lions.¹

An analysis of species, habitats, threats, and existing protections within the California Current found that the waters around Point Sal are among the top 5% in conservation value in the California Current.² Notably, the area remained within the top 5% regardless of whether conservation value was being measured utilizing the species richness index or the rarity index, with a significant portion of these areas falling into the top 2%. This region of California is also well-known as a marine biogeographic 'transitional zone' for ocean and coastal biota. Many species reach the southern or northern limits of their ranges here, making it an important biogeographic boundary along California's coast.³

The nutrient-rich waters in this region support a productive food web. Upwelling, where nutrient-rich deep waters rise to the surface, enhances primary productivity, providing ample food resources for a variety of marine organisms, from plankton to larger predators. A krill hotspot⁴ and Biologically Important Area (BIA) for blue whale foraging are located just outside the proposed area,⁵ indicating that these waters are productive enough to support feeding blue whales, which ingest up to 16 tons of krill per day.⁶ The state waters within the proposed area are home to several other BIAs for marine mammal species, including a BIA for humpback whale foraging, a BIA for migrating gray whales, and BIA for resident harbor porpoises.⁷

Lion Rock haul out and roosting site

Lion Rock, located off the southern coast of Point Sal, is an important haul out site for sea lions and other marine mammals. As many as 883 sea lions have been observed on the rock on a

¹ Condor Environmental Planning Services, "Point Sal Reserve Revised Management Plan" (Santa Barbara County Parks Department, July 2002), <https://ryono.net/pointsal/ptsalreserve.pdf>.

² Nathan Elliott et al., "Assessment of Marine Protected Areas in the California Current" (Petaluma, CA: Point Blue, June 5, 2020), https://www.pointblue.org/wp-content/uploads/2020/09/MPA-Assessment_Final.pdf.

³ Ronald S. Burton, "Intraspecific Phylogeography Across the Point Conception Biogeographic Boundary," *Evolution* 52, no. 3 (June 1998): 734–45, <https://doi.org/10.1111/j.1558-5646.1998.tb03698.x>.

⁴ Jarrod A. Santora et al., "Mesoscale structure and oceanographic determinants of krill hotspots in the California Current: Implications for trophic transfer and conservation," *Progress in Oceanography* 91, no. 4 (December 2011): 397–409, <https://doi.org/10.1016/j.pocean.2011.04.002>.

⁵ National Oceanic and Atmospheric Administration, "Biologically Important Area Map," Web map, Cetacean & Sound Mapping, accessed November 20, 2023, <https://cetsound.noaa.gov/biologically-important-area-map>.

⁶ Matthew S. Savoca et al., "Baleen Whale Prey Consumption Based on High-Resolution Foraging Measurements," *Nature* 599, no. 7883 (November 2021): 85–90, <https://doi.org/10.1038/s41586-021-03991-5>.

⁷ NOAA, "Biologically Important Area Map."

single day, and the site is also occasionally used by Steller sea lions and elephant seals.⁸ Haulouts are critical to the behavioral cycles of foraging, resting, and breeding for pinnipeds. However, these species are highly sensitive to visual and auditory disturbance and will leave haulouts when they become stressed – even abandoning them permanently, if disturbances occur frequently. Undisturbed haulouts are thus necessary for the protection of these species. Given Point Sal's remote location, Lion Rock currently experiences little to no human-caused disturbance⁹ and may be one of the few remaining undisturbed haulouts along the busy California coastline – making it especially important for the conservation of these marine mammals.

Commented [S11]: discrepancy in spelling from "haul out". are these supposed to be different?

Lion Rock is also an important roosting site and breeding site for many seabird species. Roosting is a vital behavior for seabirds, providing essential rest, social interaction, protection, and nesting opportunities, thereby enhancing their energy conservation, reproductive success, and overall well-being in the dynamic marine environment. Seabirds like cormorants do not have oil-producing glands to help their feathers repel water, making roosting especially critical for these species to dry after foraging. Thousands of cormorants have been observed roosting on Lion Rock,¹⁰ and it is also a roost site of significant importance for Brown Pelicans, which until recently were listed as endangered species.¹¹ Finally, Lion Rock is a breeding site of growing importance for Brandt's cormorants, with as many as 14 breeding pairs observed on the rock in recent years.¹²

Connectivity and larval retention zone

Although wind-driven upwelling is a vital source of nutrients for California ecosystems, this large-scale offshore transport of coastal ocean water poses a significant challenge to larval stages of marine organisms that must recruit to coastal environments. Headlands, such as found at Point Sal, can help to mitigate this effect by slowing down or recirculating ocean currents, and research has shown waters on the leeward sides of coastal promontories or headlands provide refuge for fish and invertebrate larvae against offshore transport during upwelling events.¹³ These "larval retention zones" are critical for enhanced recruitment, and help to ensure that adult populations are supplied with larvae in recruitment-limited upwelling regions.¹⁴ Larval retention zones also serve as biological hotspots, where upwelling delivers

⁸ NMFS, NOAA, and Department of Commerce. Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Weapons Testing at Vandenberg Air Force Base; California. 87 FR 762 (Jan. 6, 2022). Available at <https://www.federalregister.gov/documents/2022/01/06/2022-00032/takes-of-marine-mammals-incidental-to-specified-activities-taking-marine-mammals-incidental-to>.

⁹ Dan Robinette, Sara Acosta, and Julie Howar, "Year 1 Results of Baseline Monitoring Within the Point Sur to Point Mugu Study Area of the Seabird Protection Network" (Petaluma, CA: PRBO Conservation Science, November 15, 2012).

¹⁰ Condor Environmental Planning Services, "Point Sal Reserve Revised Management Plan."

¹¹ Dan Robinette and Julie Lanser, "Brown Pelican Roost Utilization Along the Coastal Margin of Vandenberg Air Force Base, 2004" (Stinson Beach, CA: PRBO Conservation Science, May 3, 2006).

¹² Robinette, Acosta, and Howar, "Year 1 Results of Baseline Monitoring Within the Point Sur to Point Mugu Study Area of the Seabird Protection Network."

¹³ Amber J. Mace and Steven G. Morgan, "Larval Accumulation in the Lee of a Small Headland: Implications for the Design of Marine Reserves," *Marine Ecology Progress Series* 318 (August 3, 2006): 19–29, <https://doi.org/10.3354/meps318019>.

¹⁴ Ibid.

nutrients that then fuel phytoplankton growth and support marine food webs. This effect has been shown even for small headlands like Point Sal (e.g., Bodega Headland).¹⁵

Point Sal's leeward waters are known to serve as a larval retention zone in this stretch of the Central Coast. One study used seabird foraging rates as a proxy for juvenile fish recruitment to explore whether seabird foraging and geographic indicators can be used to identify larval retention zones, in order to help inform MPA network spatial design.¹⁶ The findings show that both long and short headlands—including Point Sal—lead to higher juvenile fish abundance, and that coastal orientation was an important determinant of juvenile fish abundance. Pelagic cormorant foraging rates were also found to be higher at south-facing coasts like Point Sal's compared to other coastal orientations. This is due to weaker offshore advection caused by coastal upwelling along south-facing coasts, and eddies forming in the lee of the south-facing coasts of embayments.¹⁷

This biological evidence for local retention zones is supported by physical oceanography data. Multiple studies of oceanographic currents in the area show that within the Santa Barbara Channel, ocean currents primarily run from east to west.¹⁸ Just north of Point Conception there is strong seasonal equatorward flow heading south. Around the area of Point Sal, the interaction of these westward and southward surface currents cause convergence.¹⁹ Additionally, the region experiences episodic periods of wind relaxation in the spring, leading to less vigorous upwelling with important biological consequences for larval retention and surface productivity.²⁰

Historical and cultural use

Point Sal holds significant cultural and historical ties to the Chumash people, who have inhabited the region for thousands of years.²¹ For instance, the Chumash village Axwin was located very close to the area.²² There is abundant evidence of Chumash occupation of Point Sal as recently as 250 years ago and as far back as 4,800 years ago. Rock rings where homes once stood, grinding stones, and other Chumash artifacts are easily visible. Human remains found at Chumash burial sites indicate that the diet of ~~ancient peoples~~ Indigenous peoples living

¹⁵ Ibid.

¹⁶ Dan Robinette, Nadav Nur, and Jaime Jahncke, "Spatial Patterns in Nearshore Juvenile Fish Abundance Throughout the California Network of Marine Protected Areas as Revealed by Seabird Foraging Rates," *California Cooperative Oceanic Fisheries Investigations* 60 (2019).

¹⁷ Ibid.

¹⁸ Clinton D. Winant, Edward P. Dever, and Myrl C. Hendershott, "Characteristic Patterns of Shelf Circulation at the Boundary between Central and Southern California," *Journal of Geophysical Research: Oceans* 108, no. C2 (2003), <https://doi.org/10.1029/2001JC001302>.

¹⁹ Sutara H. Suanda et al., "Wind Relaxation and a Coastal Buoyant Plume North of Pt. Conception, CA: Observations, Simulations, and Scalings," *Journal of Geophysical Research: Oceans* 121, no. 10 (2016): 7455–75, <https://doi.org/10.1002/2016JC011919>.

²⁰ Louis W. Botsford et al., "Effects of Variable Winds on Biological Productivity on Continental Shelves in Coastal Upwelling Systems," *Deep Sea Research Part II: Topical Studies in Oceanography*, The Role of Wind-Driven Flow in Shelf Productivity, 53, no. 25 (December 1, 2006): 3116–40, <https://doi.org/10.1016/j.dsr2.2006.07.011>.

²¹ Bureau of Land Management, "Point Sal," Visit Point Sal, accessed November 20, 2023, <https://www.blm.gov/visit/point-sal>.

²² King, Chester. *The Names and Locations of Historic Chumash Villages*. The Journal of California Anthropology, 12 Jan. 1975, escholarship.org/uc/item/8833s5k5

at Point Sal was high in marine protein, demonstrating the strong link between coastal peoples and marine resources.²³ There are many Chumash people who still live in the general area and come to Point Sal for a variety of reasons. Protecting the marine waters and coastal resources of Point Sal would help to recognize its value as a cultural heritage site that still contributes to the identity and sense of place for many of the ~~tribe~~ Indigenous people of Central California today.

Habitat

Since the creation of the California MPA network, a new dataset that allows for detailed delineation of the habitat categories used in the design of the MPA network for all California state waters has been completed and made available through the California State Mapping Program (CSMP). Using this dataset, we characterized the habitat types present in the area proposed for protection around Point Sal (Figure 1).²⁴

The proposed area is characterized by a large amount of sandy bottom, with some rocky substrate south of the point and in the northeast portion of the area (8.3% shallow (0-30m) rocky bottom, 41.9% shallow sandy bottom, 1.2% deeper (30-100m) rocky bottom, and 48.6% deeper sandy bottom). Kelp beds are present on the shallow rocky bottom substrate (personal communications, Dan Robinette), supporting numerous marine species like rockfish and sea otters.²⁵

Adding this area to the California state MPA network would increase the number of replicate sites for these four important habitat types, as recommended by the science-based guidelines for the MLPA planning process and recent peer-reviewed guidelines for the design of climate-smart MPA networks.²⁶

Land-sea connection

Coastal marine ecosystems are influenced by both ocean- and land-based activities. Conservation efforts focused on addressing ocean-based threats alone are often compromised by land-based impacts that affect coastal ecosystems, such as nutrient runoff, organic and inorganic pollutants, and the direct impacts associated with high levels of human traffic and visitation.²⁷ Planning for and designating MPAs that are linked with terrestrial reserves or adjacent to areas with little to no human impact can therefore considerably improve MPA

²³ Bureau of Land Management, "Point Sal," Visit Point Sal, accessed November 20, 2023, <https://www.blm.gov/visit/point-sal>.

²⁴ California State University, Monterey Bay, Seafloor Mapping Lab. 2014. California Seafloor Mapping Project - Undersea Imagery Archive 2007-2014. <https://csumb.edu/undersea/seafloor-maps> Accessed 2023.

²⁵ Condor Environmental Planning Services, "Point Sal Reserve Revised Management Plan."

²⁶ Nur Arafah-Dalmau et al., "Integrating Climate Adaptation and Transboundary Management: Guidelines for Designing Climate-Smart Marine Protected Areas," *One Earth* 6, no. 11 (November 17, 2023): 1523–41, <https://doi.org/10.1016/j.oneear.2023.10.002>.

²⁷ David M. Stoms et al., "Integrated Coastal Reserve Planning: Making the Land–Sea Connection," *Frontiers in Ecology and the Environment* 3, no. 8 (2005): 429–36, [https://doi.org/10.1890/1540-9295\(2005\)003\[0429:ICRPMT\]2.0.CO;2](https://doi.org/10.1890/1540-9295(2005)003[0429:ICRPMT]2.0.CO;2).

conservation outcomes.²⁸ The proposed SMRCA is adjacent to Point Sal State Beach, which currently protects approximately 80 acres and includes just over 1 1/2 miles of ocean frontage. Due to its remote location, and possibly these terrestrial protections, Point Sal's terrestrial habitats remain relatively undisturbed and free of negative human impacts,²⁹ making the waters around Point Sal a particularly valuable area to protect.

Access and recreation

The coastline of the proposed SMR-SMCA is currently accessible through Point Sal State Beach and Point Sal Trail. Recreational activities at Point Sal State Beach include fishing, beach combing, hiking, nature study, photography, picnicking, and sunbathing.

In 1998, heavy rains destroyed Point Sal Road in several places, which was the main access road for Point Sal State Beach. The road was closed until May 2008, when Air Force and County officials announced they had reached an interim agreement to provide access. They have since been "coordinating to place informational signs, fix fences and repair washed-out sections of the County road", though progress has been extremely slow. The road remains closed, although according to California's State Parks Department, efforts to develop a long-term access plan to Point Sal State Beach are ongoing.³⁰

Point Sal State Beach is currently best accessed via Point Sal Trail, which is located at the end of Brown Road. This moderately challenging trail is approximately 10.2 miles round trip to the beach and back,³¹ and is open year-round. It provides unparalleled access to untouched pristine coastal wilderness, traversing astonishingly beautiful coastal habitats such as dunes, chaparral, windswept bluffs, and rocky cliffs. The trail is described as "a very popular area for hiking".³²

By making the ocean more productive and resilient to climate change, stronger marine protections like the proposed Point Sal SMRSMCA can enhance shore-based recreation. When combined with efforts to increase access and connect more people to nature, additional state MPAs can give those from marginalized communities more equitable access to the ocean's resources and benefits. California's MPAs have been shown to increase the biomass of fishery-targeted species and promote "spillover" into nearby coastal areas, benefitting nearby fishing grounds.³³ The California Environmental Protection Agency identifies the adjacent city of Guadalupe as "disadvantaged" under CA Senate Bill 535, and their synthesis of environmental and socioeconomic indicators further reveals that Guadalupe – alongside Santa Maria and Lompoc – are underprivileged communities that experience significant cumulative impacts from

²⁸ Arafeh-Dalmau et al., "Integrating Climate Adaptation and Transboundary Management."

²⁹ Robinette, Acosta, and Howar, "Year 1 Results of Baseline Monitoring Within the Point Sur to Point Mugu Study Area of the Seabird Protection Network."

³⁰ California State Parks, "Point Sal SB," CA State Parks, accessed November 20, 2023, <https://www.parks.ca.gov/>.

³¹ County of Santa Barbara California, "Point Sal," County of Santa Barbara Parks, accessed November 20, 2023, <https://www.countyofsb.org/900/Point-Sal>.

³² All Trails, "Point Sal Overlook," Travel Website, AllTrails.com, accessed November 20, 2023, <https://www.alltrails.com/trail/us/california/point-sal-overlook>.

³³ Hunter S. Lenihan et al., "Increasing Spillover Enhances Southern California Spiny Lobster Catch along Marine Reserve Borders," *Ecosphere* 13, no. 6 (2022): e41110, <https://doi.org/10.1002/ecs2.4110>.

pollution.³⁴ Given these communities' close proximity to Point Sal, implementing an ~~SMR~~SMCA at the proposed site could enhance access for disadvantaged populations to valuable coastal resources and fishing opportunities, as a popular shore fishing site is located just north of the proposed Point Sal SMCA boundary, near the Rancho Guadalupe Dunes Reserve area. In addition to the designation of a new Point Sal ~~SMR~~SMCA, we urge the state to redouble its efforts to provide access to Point Sal State Beach by reopening Point Sal Road.

Socioeconomic impacts

Current fishing in the proposed area is limited, likely due to its considerable distance from nearest port areas of Morro Bay and Santa Barbara. The proposed Point Sal MPA overlaps with 14% of California fishing block 631, and 11% of California fishing block 632. According to the Marine Fisheries Data Explorer, annual landings reported from these blocks over a ten year period from 2012 to 2022 were an average of 231,460 lbs by weight and \$678,632 by value per year.³⁵ This represents just 0.11% of the landings by weight, and 1.1% of landings by value, reported for the Central Coast region over the same 10 year period.^{36,37} For this reason, and due to the relatively small proposed size of the MPA, we believe the establishment of an ~~SMR~~SMCA in this area would have minimal economic impact to commercial fisheries.

Our request to CDFW for recreational fishing data from this area was being processed at time of submission; we will evaluate the potential impact to recreational fishers and submit it to the state following receipt of the requested data.

Historical context

During the MLPA planning process, a large SMR around Point Sal was proposed in External Proposed MPA Package AC. The proposed SMR was 21.92 mi², with an alongshore span of 6.1 miles and depth range of 0-192 feet. Based upon a review of the historical documents provided by the Fish & Game Commission in October 2023, it is not clear why the state chose not to designate this proposed SMR at that time.

Future stressors may compromise California's coastal waters and nearby MPAs

There is increasing pressure to develop resources in and otherwise utilize California's coastal waters. For example, as efforts intensify to mitigate and adapt to climate change, the state is

³⁴ OEHHA, "CalEnviroScreen 4.0," Text, CA.Gov, September 20, 2021, <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>; OEHHA, "Final Designation of Disadvantaged Communities Pursuant to Senate Bill 535" (CalEPA, May 2022).

³⁵ Assuming equal distribution of effort and value across all years. Because smaller timescales resulted in confidential data outputs from the Marine Fisheries Data Explorer, we aggregated 10 years of landings data from both blocks to calculate average annual landings data. However, the state should look into the confidential data to find more detailed estimates of fisheries landings from this area.

³⁶ We defined the Central Coast region as all fishing blocks from Point Ano Nuevo to Point Conception:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=144496&inline>

³⁷ California Department of Fish and Wildlife, "Marine Fisheries Data Explorer," database, MFDE, accessed November 21, 2023, <https://wildlife.ca.gov/Conservation/Marine/Data-Management-Research/MFDE>.

investing in offshore wind and desalination plants. Interest in ocean-based carbon dioxide removal (CDR) is growing, and aquaculture activities are proliferating. Scientists warn that a rising wave of ocean industrialization, such as underway in California's waters, -will pose additional strain on marine biodiversity.³⁸

MPAs along the central coast of California will likely experience these types of stressors in the coming decade. Vandenberg SMR, located 17 km to the south of this proposed area, and the Point Buchon SMR/SMCA complex, located 50 km to the north, are both sited near potential future offshore wind development projects. The proposed California Demonstration Project (CADEMO) seeks to place four floating offshore wind turbines in state waters just outside the boundaries of Vandenberg SMR, and would deliver power via a subsea cable traveling under the seafloor to an onshore cable landing site at Vandenberg Space Force Base. The Morro Bay Wind Energy Area is located in federal waters just outside Point Buchon SMCA, and two leases have recently been issued to commercial wind developers to begin planning for offshore wind development. Offshore wind construction and operations are expected to impact the marine environment through increased ocean noise, collisions with turbines, entanglements, the introduction of electromagnetic fields, alterations to existing habitats and hydrodynamics, and the possible release of contaminants.³⁹ While the state of California is working closely with developers and the federal government to minimize the environmental impacts of these projects as much as possible, it stands to reason that the region, including Vandenberg SMR and the Point Buchon SMR/SMCA complex, will experience some level of adverse impact related to the development of heavily industrialized renewable energy projects.

In addition, Point Buchon SMR/SMCA is located just north of the Diablo Canyon Power Plant, which uses seawater for its once-through cooling process. The plant's intake pipes draw in more than 2.5 billion gallons of water per day. This large and continuous seawater withdrawal is estimated to kill roughly 1.5 billion fish in early life stages each year, as creatures are sucked into the cooling systems or become impinged against the screens on the open-water pipes.⁴⁰ The cooling water is also discharged back into the ocean water at a warmer temperature, which can cause additional harm to kelp, fish, and other marine life in the area.⁴¹ While Diablo Canyon's intake is not directly within the Point Buchon SMR/SMCA cluster, the area of source water being drawn into the plant likely overlaps with the MPA boundaries and has the potential to withdraw marine life out of the protected area.

As the increase of local stressors are likely to strain resources in the Vandenberg and Point Buchon MPAs, a new MPA at Point Sal could help to protect similar habitat not subject to these

³⁸ Douglas J. McCauley et al., "Marine Defaunation: Animal Loss in the Global Ocean," *Science* 347, no. 6219 (January 16, 2015): 1255641, <https://doi.org/10.1126/science.1255641>.

³⁹ NOAA Fisheries, "Offshore Wind Energy: Protecting Marine Life," Protecting Marine Life, National, accessed November 20, 2023, <https://www.fisheries.noaa.gov/topic/offshore-wind-energy/protecting-marine-life>.

⁴⁰ Mackenzie Shuman, "How California's Last Remaining Nuclear Power Plant Transformed Marine Life off the Coast," *San Luis Obispo Tribune*, March 25, 2022, <https://www.sanluisobispo.com/news/local/environment/article258804173.html>.

⁴¹ *Ibid.*

local stressors, adding a helpful replicate MPA to serve as an insurance policy for the region's MPA network.

Climate resilient MPA networks

Changing ocean conditions, such as warming temperatures, acidification, and reduced oxygen, combined with increasing crowding, and pressure on our ecosystems, will compound local stressors mentioned above – putting California's spectacular marine biodiversity at elevated risk. MPAs are increasingly recognized as an important ocean-climate solution. Fully protected MPAs can allow for disturbed and degraded areas to recover, and also promote and retain complex, intact food webs and ecosystems that are better at resisting future stressors.⁴² A recent meta-analysis of more than 22,000 peer-reviewed studies spanning more than 200 MPAs around the world demonstrated that marine reserves can significantly enhance carbon sequestration, coastal protection, biodiversity, and the reproductive capacity of marine organisms as well as fishers' catch and income.⁴³

Further, when designed with climate resilience in mind, MPA networks can provide greater resilience than single MPAs on their own.⁴⁴ A new analysis focused on the California Bight has identified 21 actionable guidelines for the design of climate-smart MPA networks across large geographies and international boundaries.⁴⁵ The designation of a new MPA at Point Sal would meet or help to advance at least 11 of these climate-smart MPA design guidelines ([Appendix A](#)). Specifically, a new MPA at Point Sal would help to increase habitat representation and replication; protect critical and unique areas relevant to the life histories of important California species; incorporate and enhance connectivity across the broader MPA network; provide permanent protections better suited for the maintenance of ecosystem function and resilience at relevant timescales for climate resilience, and; enhance the MPA network's protections for healthy and relatively undisturbed habitats ([Appendix A](#)). In the face of increasing impacts related to climate change, it is critical that the state adaptively manage its MPA network with climate resilience in mind.

Relevance to MLPA Goals and DMR Recommendations

This proposed Point Sal **SMCAMR** contributes directly to MLPA Goals 1, 2, 3, and 6 ([California Marine Life Protection Act](#)). Protecting the rich biodiversity, relatively undisturbed habitats, and important larval retention zone found in the relatively undisturbed waters around Point Sal would

⁴² Lewis A.K. Barnett, Marissa L. Baskett, and Louis W. Botsford, "Quantifying the Potential for Marine Reserves or Harvest Reductions to Buffer Temporal Mismatches Caused by Climate Change," *Canadian Journal of Fisheries and Aquatic Sciences* 72, no. 3 (March 2015): 376–89, <https://doi.org/10.1139/cjfas-2014-0243>; Lewis A. K. Barnett and Marissa L. Baskett, "Marine Reserves Can Enhance Ecological Resilience," ed. Peter Mumby, *Ecology Letters* 18, no. 12 (December 2015): 1301–10, <https://doi.org/10.1111/ele.12524>; Callum M. Roberts et al., "Marine Reserves Can Mitigate and Promote Adaptation to Climate Change," *Proceedings of the National Academy of Sciences* 114, no. 24 (June 13, 2017): 6167–75, <https://doi.org/10.1073/pnas.1701262114>.

⁴³ Juliette Jacquemont et al., "Ocean Conservation Boosts Climate Change Mitigation and Adaptation," *One Earth* 5, no. 10 (October 2022): 1126–38, <https://doi.org/10.1016/j.oneear.2022.09.002>.

⁴⁴ Roberts et al., "Marine Reserves Can Mitigate and Promote Adaptation to Climate Change."

⁴⁵ Arafeh-Dalmau et al., "Integrating Climate Adaptation and Transboundary Management."

help to protect the state's marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve recreational, educational and study opportunities provided by marine ecosystems subject to minimal human disturbance.

In addition, this petition helps to advance DMR Recommendation 4.b.) "Identify and utilize best science-based approaches to inform potential changes to the MPA Network in order to enhance Network performance." New and groundbreaking peer-reviewed guidelines for the design of climate-smart MPA networks have recently been developed, and the proposed MPA at Point Sal aligns strongly with these guidelines.⁴⁶ We recommend the state consider these guidelines for the review and implementation of additional proposals to enhance and expand California's MPA network.

We must pass on a healthier ocean for future generations to experience, benefit from, and enjoy. California has the opportunity now to protect the conservation legacy of our iconic coastal state, including its rich and diverse marine wildlife. We urge the state to designate a new MPA at Point Sal to enhance the protection and climate resilience of our coastal and ocean resources, for the benefit of current and future generations of Californians.

⁴⁶ Ibid.



State of California – Fish and Game Commission

PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE

FGC 1 (Rev 06/19) Page 1 of 4

Tracking Number: (2023-28MPA-AM1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. **Person or organization requesting the change (Required)**
Name of primary contact person: Lisa Suatoni, National Resources Defense Council
Address: 111 Sutter St 21st floor, San Francisco, CA 94104
Telephone number: [REDACTED]
Email address: [REDACTED]
2. **Rulemaking Authority (Required)** - Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.
3. **Overview (Required)** - We propose the designation of a new State Marine ~~Reserve~~ Conservation Area (SMCA) in the waters around Point Sal, Central California to 1) protect ~~this~~ the rich and productive ecosystem and biodiversity found within, 2) protect an important larval retention zone and enhance the connectivity dynamics within the region, and 3) enhance the climate resilience of the broader state MPA network.

The proposed area aligns with state MPA design and feasibility guidelines provided by CDFW, and is bounded by the mean high tide line, the 3 nm state waters boundary, and straight lines connecting the following points in the order listed:

- 34.880667518 N lat. 120.726433061 W long. (SW corner)
- 34.929894739 N lat. 120.727488272 W long. (NW corner)
- 34.930008197 N lat. 120.666597401 W long. (NE corner)
- 34.880979714 N lat. 120.639473286 W long. (SE corner)

The proposed SMCA would prohibit the injury, damage, take, or possession of all living, geological, or cultural marine resources with the exception of recreational take of finfish from shore using hook and line. This permitted activity would allow for fishing access to the



shoreline and marine resources for recreational, traditional, ceremonial, cultural, and subsistence purposes for the public including, the Chumash people and other members of federally -and non-federally recognized tribes.

However, We recommend that the state consult with local Indigenous communities and Tribes to explore co-management options for the Point Sal SMCA before designation, to determine whether a State Marine Conservation Area with exemptions for cultural and subsistence use of relevant Indigenous communities and Tribes in the area is warranted.

4. **Rationale (Required)** - Located in Santa Barbara County, Point Sal is an ecologically rich and relatively remote promontory along the coastline that supports a diverse marine ecosystem and provides critical habitat for seabirds and marine mammals alike. The nutrient-rich waters found at this site allow for a diversity of ocean life to thrive ~~here~~, with kelp beds, rich tidepools, and productive waters that support humpback whales, gray whales, a variety of sea lions and seals, sea otters, and a biologically important feeding area for endangered blue whales nearby. Offshore, Lion Rock is a significant roosting site for seabirds like the Brown pelican and Brandt's cormorant, ~~and also~~ acts as a relatively undisturbed haul-out for sea lions, seals, and other pinnipeds, underlining the area's conservation value for these animals as the California coastline becomes increasingly developed. In addition, the leeward waters of Point Sal act as a larval retention zone. Larval retention zones, which are known to be highly beneficial areas for the recruitment of fish and invertebrate larvae in wind-driven upwelling zones while promoting the biodiversity of the surrounding ecosystem. ~~Historically,~~ Point Sal also holds cultural significance for the Chumash people, with evidence of their occupation as recently as 250 years ago and as far back as 4,800 years ago; Chumash artifacts are visible throughout Point Sal, and analyses of burial sites from the area demonstrate the rich cultural ties to the traditional stewards of this land. Furthermore, Point Sal is still of importance to the Chumash people who visit and use the area today,

Formatted: Line spacing: Multiple 1.08 li

Protecting the waters of Point Sal aligns strongly with the goals set by the California Marine Life Protection Act (MLPA), especially with regards to the protection of natural biodiversity found in relatively undisturbed marine ecosystems. Given the remote nature of Point Sal, its relative lack of human disturbance, and ~~increasing potential for increased~~ threats to the California MPAs found nearby, there is value in an urgent need to protect the ecological merits ~~and~~ maximize the ecological and biological benefits that Point Sal provides to the marine species that inhabit the area and to the broader Central California region. As development of the state's coastline and seascape progresses, protecting ~~these relatively~~ undisturbed, untouched areas will add to the resilience of the MPA network by providing refugia for marine life from encroaching threats. Furthermore, designating an MPA in the proposed area will improve recreational, educational, and study opportunities at Point Sal and support equitable access to coastal resources moving forward into the future.

Formatted: Font: Not Bold, Font color: Auto

Commented [SI1]: alternatively could say undisturbed

See Petition Narrative for full rationale.

SECTION II: Optional Information

5. **Date of Petition:** 11/30/2023 AMENDED 3/14/2025



6. Category of Proposed Change

- ☐ Sport Fishing
- ☐ Commercial Fishing
- ☐ Hunting
- ☒ Other, please specify: MPAs, Section 632.

7. The proposal is to: *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*

- ☒ Amend Title 14 Section(s): [Westlaw regulations](#).
- ☐ Add New Title 14 Section(s): [Click here to enter text](#).
- ☐ Repeal Title 14 Section(s): [Click here to enter text](#).

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

Or ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation.
If the proposed change requires immediate implementation, explain the nature of the emergency:

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents:

- a. Proposed Point Sal SMR petition narrative
- b. Figure 1 - Proposed Point Sal SMR habitat map
- c. Appendix A - Climate-smart MPA design guidelines met by proposed Point Sal SMR
- d. Appendix B - Proposed Point Sal SMR letter of support

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

Current fishing in the proposed area is limited, likely due to its considerable distance from the nearest port areas of Morro Bay and Santa Barbara. The proposed Point Sal MPA overlaps with 14% of California fishing block 631, and 11% of California fishing block 632. According to the Marine Fisheries Data Explorer, annual landings reported from these blocks over a 10-ten year period from 2012 to 2022 were an average of 231,460 lbs by weight and \$678,632 by value per year. This represents just 0.11% of the landings by weight, and 1.1% of landings by value, reported for the Central Coast region over the same 10--year period. For this reason, and due to the relatively small proposed size of the MPA, we believe the establishment of an SMR in this area would have minimal economic impact to commercial fisheries.

Our request to CDFW for recreational fishing data from this area was being processed at time of submission; we will evaluate the potential impact to recreational fishers and submit it to the state following receipt of the requested data.



State of California – Fish and Game Commission

PETITION TO THE CALIFORNIA FISH AND GAME COMMISSION FOR REGULATION CHANGE

FGC 1 (Rev 06/19) Page 4 of 4

12. Forms: If applicable, list any forms to be created, amended or repealed:

SECTION 3: FGC Staff Only

Date received: [Click here to enter text.](#)

FGC staff action:

- ☐ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____
- ☐ Granted for consideration of regulation change

Tracking Number

March 14, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Submitted electronically to fgc@fgc.ca.gov

RE: Amendments to Petition 2023-28MPA: Point Sal State Marine Reserve

Dear President Zavaleta and Honorable Commissioners:

In November 2023, Natural Resources Defense Council (NRDC) submitted petition 2023-28MPA to the Fish and Game Commission (FGC) proposing a new marine protected area (MPA) off the coast of Point Sal, to be named Point Sal State Marine Reserve (SMR).

With the ecological significance of the area in mind, we proposed regulations for the Point Sal SMR that are aligned with current State Marine Reserves: *"It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource."* Given the historic and contemporary importance of the region to the Chumash people, we also recommended that the state consult with local Indigenous communities and Tribes before designation to determine whether a State Marine Conservation Area with exemptions for cultural and subsistence use of relevant Indigenous communities and Tribes in the area is warranted.

Since January 2024, we have conducted extensive outreach with community members and interested parties to discuss the proposal and gather additional insights and information. These conversations have improved our understanding of the Point Sal region and provided a greater appreciation of the historical and contemporary significance of the area for Chumash peoples. Our discussions with local communities, Tribal members, and Tribal organizations in particular, informed our decision to amend the original petition submitted to the FGC.

Our decision to amend Petition 2023-28MPA to allow recreational take of finfish by hook-and-line from shore is in recognition of: 1) the importance of this area for federally and non-federally recognized Chumash peoples, and 2) the importance of the area for shore-based subsistence and sport fishers. We support having the option to rename the Point Sal State Marine Conservation Area with a Chumash place name after further consultation with Chumash Tribes in the region. While we explored options for renaming the proposed SMCA, we were unable to affirmatively determine an appropriate Chumash name in time for the amendment deadline.

We hope this amendment, informed by the additional insight and information gathered through our outreach efforts with local communities and interested parties, encourages the Commission to support the proposed Point Sal SMCA.

Thank you for your consideration.

Sincerely,

Sandy Aylesworth
Director, Pacific Initiative, Nature
Natural Resources Defense Council

Bella Sullivan
Next Wave Fellow
Natural Resources Defense Council



Tracking Number: (2023-29MPA-AM1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change (Required)

Name of primary contact person: Lisa Suatoni

Address: Natural Resources Defense Council, [REDACTED]

Telephone number: [REDACTED]

Email address: [REDACTED]

Co-sponsors: Sam Cohen - Santa Ynez Band of Chumash Indians, Azsha Hudson - Environmental Defense Center

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested:

Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.

3. Overview (Required):

The attached document describes a proposal for an additional California-Chumash co-management SMCA in the South Coast region to be named Mishopshno, after following the ancestral Chumash village located in the area to honor the cultural heritage of the Chumash people and their continued relationship to their ancestral lands and waters. The Mishopshno proposed SMCAMPA would prohibit the injury, damage, take, or possession of all living, geological, or cultural marine resources with the exception of Tribal take using hand based equipment by the Santa Ynez Band of Chumash Indians, and following exceptions: recreational take of finfish fishing from shore using hook and line. These permitted activities would; and allow for enhanced access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the public including: federally recognized tribe of the the Santa Ynez Band of Chumash Indians (SYBCI) ; and for who will work to extend access to other non-federally recognized Chumash people.

The proposed area aligns with state MPA Master Plan design and feasibility guidelines provided by CDFW, and is bounded by the mean high tide line, the tip of Salt Point the 3-nm state waters boundary,

and straight lines connecting the following points in the order listed:

1. [SE: 119.53589W long. 34.366106N lat.](#)
2. [NE: 119.53589W long. 34.395977N lat.](#)
3. [NW: 119.587711W long. 34.416944N lat.](#)
4. [SW: 119.587711W long. 34.366106N lat.](#)

4. Rationale (Required) - Describe the problem and the reason for the proposed change:

The intent of the SMCA is to 1) help meet the Master Plan's size and spacing guidelines for spacing between protected habitats, promoting connectivity in the network and representation of habitat types, 2) protect habitat attractive to marine wildlife, such as juvenile white sharks, and 3) [honor the nearby historical Mishopshno village and cultural heritage of the Chumash in the area and restore management to the SYBCI of this portion of coastal waters. This petition calls for a co-management agreement between the State of California and the SYBCI through continued access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for all Chumash people. allow enhanced access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the federally recognized tribe of the Santa Ynez Band of Chumash Indians, who will work to extend access to other non-federally recognized Chumash people. See attached documentation for further details.](#)

SECTION II: Optional Information

5. Date of Petition: 11/30/2023 AMENDED 3/26/2025

6. Category of Proposed Change

- ☐ Sport Fishing
- ☐ Commercial Fishing
- ☐ Hunting
- ☒ Other, please specify: MPAs, Section 632

7. The proposal is to: *(To determine section number(s), see current year regulation booklet or <https://govt.westlaw.com/calregs>)*

- ☒ Amend Title 14 Section(s): [Westlaw Regulations](#)
- ☐ Add New Title 14 Section(s): Click here to enter text.
- ☐ Repeal Title 14 Section(s): Click here to enter text.

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition

- ☒ Not applicable.

9. Effective date: If applicable, identify the desired effective date of the regulation. If the proposed change requires immediate implementation, explain the nature of the emergency: At the discretion of the Commission.

10. Supporting documentation: Identify and attach to the petition any information supporting the proposal including data, reports and other documents: See attached.

- a. Proposed Mishopshno SMCA petition narrative [\(updated as of 3/26/2025\)](#)

- b. Appendix A – Expanded synthesis of juvenile white shark aggregation at proposed Mishopshno SMCA
- c. Appendix B – Proposed Mishopshno SMCA letter of support

11. Economic or Fiscal Impacts: Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:

Some commercial fishing and fishing by commercial passenger fishing vessels (CPFVs) occurs in this area. The proposed Mishopshno SMCA is located in California fishing block number 652, which provides a very small proportion of landings for the Santa Barbara Port Area by weight and value (see petition narrative for more detailed data). The proposed SMCA would close 18% of this fishing block to fishing. Furthermore, the regulations and boundaries for the SMCA have been amended following extensive outreach and discussions with local Tribes and fishers, in order to limit direct, near-term impacts to extractive activities to the greatest extent possible while still adhering to the MLPA's science-based size criteria and guidance around high levels of protection (see petition narrative for more detail). Considering the relatively low proportion of landings and value coming from this fishing block, the small size of the proposed SMCA within the fishing block, and the amended boundaries that allow continued access to a locally important fishing areas, we anticipate that establishing this SMCA would have limited impact on commercial fishing vessels and CPFVs in the area.

Further, previous designations of local MPAs have resulted in benefits for the commercial CA spiny lobster fishery.

Unknown. However, ~~this region is a popular fishing spot for spiny lobster in particular and preventing take in the region may not be welcomed by recreational fishers in the area. Yet, research has shown an increase in lobster populations within local MPAs and a resulting increase in lobster catch in neighboring zones.~~ Recent work found that a 35% reduction in fishing area was compensated for by a 225% increase in total catch after 6 years, demonstrating local scale trade-offs provided benefits to fisheries. The designation of this MPA is likely to have a similarly positive impact on this fishery in the medium- to long-term.

Finally, enhanced ocean protections can also benefit our economy, as millions of visitors travel to California's iconic coastline each year to recreate and enjoy a healthy ocean, supporting our state's blue economy. This area holds special importance for visitors and residents alike engaging in ocean and coastal recreation, as well as for local Chumash people engaging in cultural and subsistence practices and for recreational fishers. The proposed SMCA would support these activities, allowing public access and all non-consumptive activities, allowing fishing from shore using hook-and-line, and granting a Tribal take exemption for the federally recognized Santa Ynez Band of Chumash Indians to fish with the use of traditional hand-based equipment. While there are concerns among recreational and commercial fishers about the fiscal impacts of the proposed SMCA, many businesses assert that the creation of the Mishopshno SMCA would bolster their business through indirect tourism and recreation impacts. By making the ocean healthier and more resilient to climate change, marine protections help safeguard everyone's ability to enjoy these areas through a variety of recreational activities, far into the future.

12. Forms: If applicable, list any forms to be created, amended or repealed: [Click here to enter text.](#)

SECTION 3: FGC Staff Only

Date received: [Click here to enter text.](#)

FGC staff action:

- ☐ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

☐ Denied by FGC

☐ Denied - same as petition _____

Tracking Number

☐ Granted for consideration of regulation change

March 26, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Submitted electronically to fgc@fgc.ca.gov

RE: Amendments to Petition 2023-29MPA: Mishopshno State Marine Conservation Area

Dear President Zavaleta and Honorable Commissioners:

In 2023, the Santa Ynez Band of Chumash Indians (SYBCI), Environmental Defense Center (EDC), and Natural Resources Defense Council (NRDC) submitted petition 2023-29MPA to the Fish and Game Commission (FGC) proposing a California-Chumash co-managed marine protected area (MPA) off the coast of Carpinteria, to be named Mishopshno State Marine Conservation Area (SMCA) after the ancestral Chumash village located in the area.

Given the significance of the area to the Chumash people and the important scientific research and monitoring being conducted within the proposed boundary, the original petition proposed the following suggested regulations:

Take of all living, geological, or cultural marine resources is prohibited except:

- 1. The following federally recognized tribe is exempt from the area and take regulations found in subsection 632(b)(9) of these regulations and shall comply with all other existing regulations and statutes: The federally recognized tribe of the Santa Ynez Band of Chumash Indians. Within the proposed SMCA, the Chumash would be allowed to fish with the use of hand-based equipment. The proposed exemptions would be consistent with allowing tribal take exemptions as currently defined in Title 14, §632(a)(11), which identify how a member of a federally recognized tribe may be authorized to take living marine resources from an MPA with site-specific take restrictions. Members taking living marine resources under this provision are subject to current seasonal, bag, possession, gear and size limits in existing Fish and Game Code statutes and regulations of the Commission, except otherwise provided for in Title 14, §632(b).*
- 2. Scientific research pursuant to the MLPA regulations for SMCAs. (14 C.F.R. section 632(a)(1)(C).*

Since January 2024, our Tribal Nation and our two organizations have conducted over 100 in-person, video and phone meetings with community members and interested parties to discuss the Mishopshno SMCA proposal. These conversations have improved our understanding of the Carpinteria area, highlighted community support for protecting the coastal waters, and shaped our supplemental site-specific research. Our discussions with local Tribes, Tribal organizations, and fishers in particular have informed our decision to amend the original petition submitted to the FGC.

We developed the amendments to Petition 2023-29MPA to ensure non-federally recognized Tribes retain shore fishing access, and to limit direct, near-term impacts to extractive activities to the greatest extent possible, while still adhering to the Master Plan science-based design criteria and guidance around high levels of protection. Our amended proposed regulations are:

- Allow for the recreational take of finfish from shore using hook-and-line, promoting access to certain important marine and cultural resources for all Chumash people – including non-federally recognized Tribes;
- Allow for recreational take of finfish from shore using hook-and-line for the public;
- Reduce the SMCA in size to 9 square miles, with boundaries that leave Armpit Reef, the easternmost edge of Carpinteria Reef, and the eastern portion of the kelp forest associated with Carpinteria Reef outside of the MPA's boundaries, to allow for continued recreational and commercial fishing access to certain important local fishing grounds.

These amendments are supplemental to the amendment submitted on February 9, 2024, which excluded the Carpinteria Salt Marsh Reserve from the proposed Mishopshno SMCA boundaries given its existing protection and management under the UC Natural Reserve System.

We hope these amendments, which are informed by the additional insight and information gathered through our outreach efforts with local communities and interested parties, encourage the Commission to approve the Mishopshno SMCA.

Thank you for your consideration.

Sincerely,

Sam Cohen
Government Affairs and Legal Officer
Santa Ynez Band of Chumash Indians

Azsha Hudson
Marine Conservation Analyst & Program Manager
Environmental Defense Center

Sandy Aylesworth
Director, Pacific Initiative, Nature
Natural Resources Defense Council

Overview

The intent of this marine protected area (MPA) is to 1) help meet the Master Plan design guidelines for spacing between protected habitats, promoting connectivity in the network and representation of habitat types, 2) protect habitat important to marine wildlife, such as juvenile white sharks (JWS), and 3) restore management to the Santa Ynez Band of Chumash Indians (SYBCI) of this portion of coastal waters. This petition calls for a co-management agreement between the State of California and the SYBCI and continued access to the shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for all Chumash people.

We propose a new SMCA named Mishopshno for a prominent Chumash coastal village that was proximate to the marine area to be protected. Mishopshno village was an important coastal site in the ancestral lands of the diverse Chumash people because of its use for boatbuilding and its close proximity to the ocean. It was described by members of the Portolá expedition who encountered the town on August 17, 1769 as “...at the very edge of the sea a large village or very regular town here at this point, appearing at a distance as though it were a shipyard, because at the moment they were building a canoe that still had its topmost plank lacking from it (dubbed by soldiers La Carpinteria, the Carpenter Shop).”¹ The canoes described here were tomol, Chumash watercraft built using sophisticated techniques for production of wooden planks and waterproofing with specialized local clay.² Chumash tomol paddlers still use the area to practice for their annual crossing to Limuw, also known as Santa Cruz Island.

Designation of a new Tribal MPA supports California and Biden era federal initiatives to enhance tribal co-management.³ The Mishopshno SMCA would provide an additional Tribal co-management MPA for the South Coast and is an example of two of the four coastal 30x30 “key strategies.” 1) adaptive management of the MPAs network, and 2) advancing Tribally led conservation.⁴ Further, it would help advance Recommendation 2 of the CDFW DMR Report, “Create a Pathway to Tribal Co-Management.”⁵ *This petition is co-sponsored by the federally recognized Santa Ynez Band of Chumash Indians, the Natural Resources Defense Council, and Environmental Defense Center.*

Rationale

¹ Lynn H. Gamble, “Historic Chumash Settlements on the Mainland Coast,” in *The Chumash World at European Contact: Power, Trade, and Feasting Among Complex Hunter-Gatherers* (University of California Press, 2011).

² John Peabody Harrington et al., *TOMOL: Chumash Watercraft as Described in the Ethnographic Notes of John P. Harrington*, Ballena Press Anthropological Papers ; No. 9 (Socorro, N.M.: Ballena Press, 1978).

³ California Department of Fish and Wildlife, *California’s Marine Protected Area Network Decadal Management Review*, 2022, [https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=209209&&inline](https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=209209&&inline;).; State of California, *Pathways to 30x30: Accelerating Conservation of California’s Nature*, April 2022,

https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/30-by-30/Final_Pathwaysto30x30_042022_508.pdf;

AB-1284 Tribal ancestral lands and waters: cogovernance and comanagement agreements. (2023-2024) https://leginfo.ca.gov/faces/billStatusClient.xhtml?bill_id=202320240AB1284; U.S. Secretary Of Agriculture, Secretary Of Interior, and Secretary Of Commerce, “Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters,” 2021, https://www.doi.gov/sites/doi.gov/files/elips/documents/joint-so-3403-a1_0.pdf.

⁴ Wishtoyo Foundation, *Tribal Marine Protected Areas: Protecting Maritime Ways and Practice*, 2004, <https://static1.squarespace.com/static/5459dd35e4b0eb18b9b5599b/t/56bb76be859fd0422da8978d/1455126215937/TribalMPAsWhitePaper.pdf>

⁵ CDFW, *California’s Marine Protected Area Network Decadal Management Review*, 2022

1. Habitat, Spacing, & Connectivity

The MPA Network was designed to function as an ecological network to ensure the protection of California's diverse coastal ecosystems.⁶ During the design and planning phase, a science advisory team (SAT) identified the key metrics needed to achieve network connectivity, including MPA size, spacing, and key habitat representation and replication.⁷ Currently, mainland coastal MPAs in the Santa Barbara region, Campus Point and Point Dume, are approximately 74 miles apart, 12 miles further than the recommended maximum MPA spacing distance of 62 miles to ensure ecological connectivity (Figure 1).⁸ This proposal aims to address that gap by adding a protected area around what is now called Carpinteria, CA (the ancestral home of the SYBCI).

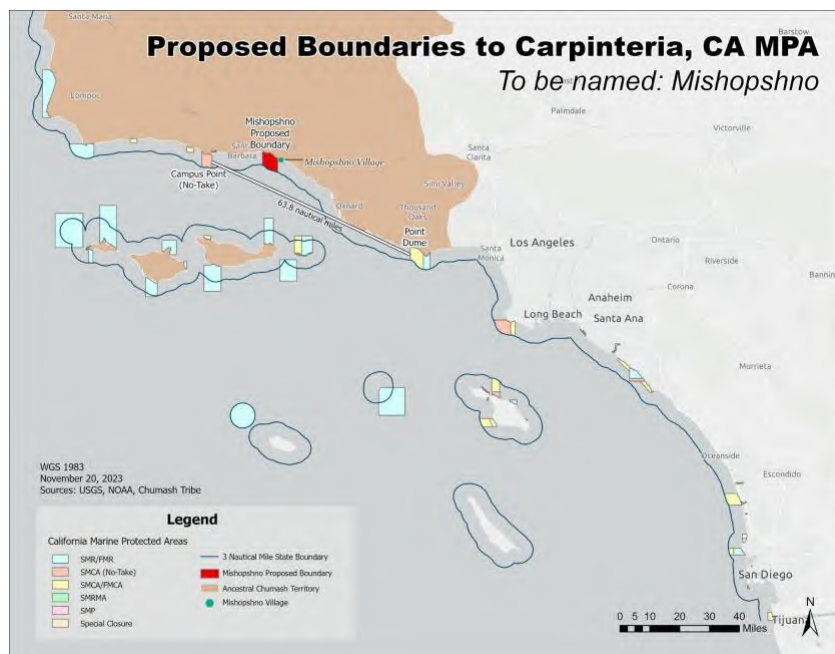


Figure 1: Map of southern California MPAs with the proposed SMCA near Carpinteria shown in red. The 64 nm distance between two existing MPAs at Campus Point and Point Dume is indicated. This distance is greater than the maximum suggested spacing to ensure ecological connectivity. Mishopshno was one of the many Chumash villages in the region at the time of European colonization.

Carpinteria, initially proposed to be the site for an MPA in the original planning stages for the network, lies on the mainland coast north of the Channel Islands.⁹ Within a relatively small area, a diversity of habitat types exist

including rocky reef, rocky intertidal, sandy habitats, sandy beaches, kelp forests, and surfgrass beds. Associated with these habitat features are higher trophic level species including halibut, lobster, nearshore sharks and rays, and multiple harbor seal haulouts. Research shows that MPAs with a diversity of habitat types and depths facilitate increased connectivity among habitats.¹⁰

⁶ CDFW, *California's Marine Protected Area Network Decadal Management Review*, 2022

⁷ California Department of Fish and Wildlife, *Master Plan for Marine Protected Areas*, 2016

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=112487&inline>; Saarman, Emily, et al., 2013. "The Role of Science in Supporting Marine Protected Area Network Planning and Design in California." *Ocean & Coastal Management*, Special Issue on California's Marine Protected Area Network Planning Process, 74 (March):45–56. <https://doi.org/10.1016/j.ocecoaman.2012.08.021>.

⁸ CDFW *Master Plan for Marine Protected Areas* 2016, Appendix A, page A-35.

⁹ California MLPA South Coast Study Region, Description of Marine Protected Areas (MPAs) in Revised External MPA Proposal C (Round 2) Created May 14, 2009.

¹⁰ Carr, Mark H., et al., 2017. "The Central Importance of Ecological Spatial Connectivity to Effective Coastal Marine Protected Areas and to Meeting the Challenges of Climate Change in the Marine Environment." *Aquatic Conservation: Marine and Freshwater Ecosystems* 27 (S1): 6–29. <https://doi.org/10.1002/aqc.2800>; Hopkins, Charlotte R., et al., 2020. "Evaluating Whether MPA Management Measures Meet Ecological Principles for Effective Biodiversity Protection." *Acta Oecologica* 108 (October):103625. <https://doi.org/10.1016/j.actao.2020.103625>.

The proposed SMCA would protect the marine waters adjacent to Carpinteria Salt Marsh Reserve, which protects a critically important Southern California estuary. The marsh lies adjacent to a sandy beach, subtidal rocky reef, and kelp beds, enabling the exchange of nutrients. The marsh also provides a regional nursery for halibut and other marine and estuarine fish, which supports a productive nearshore marine ecosystem.¹¹ Carpinteria Reef, part of which would be within the SMCA's boundaries, is a large rocky reef with kelp beds. The reef supports one of the more abundant marine life communities and persistent kelp beds in Santa Barbara County.¹² The proposed SMCA encompasses 90% of local biodiversity and counts as a "replicate," as determined from biological surveys, for the following habitat types: kelp forest (2.2 mile length), beaches (3.6 mile length), and nearshore (0-30m) soft bottom substrate (3.2 mile length).¹³ The proposed SMCA also contains the following habitat types: hardened shores (1.7 mile length), tidal flats (0.1 mile length), nearshore hard-bottomed substrate (0.34 square mile area and 0.2 mile length at 0-30m depth), deeper hard-bottomed substrate (0.02 square mile area at 30-100m depth), and deeper soft-bottom substrate (2.94 square mile area at 30-100m depth).¹⁴ Furthermore, the South Coast MLPA Planning region protects a lower proportion of nearshore hard-bottomed habitat than other regions.¹⁵ Incorporation of the Mishopshno SMCA would increase the representation of these habitat types for the region.

Ecological connectivity modeling has advanced since the initial network design process. Recent studies have confirmed that the system is generally functioning as an effective network, and that MPAs are well-connected both demographically and environmentally.¹⁶ In addition, modeling results suggest that the positive effect of MPAs on the size and abundance of species within their boundaries also enhances their contribution to larval connectivity outside their boundaries.¹⁷ The proposed Mishopshno SMCA may further this beneficial contribution, by providing an additional MPA in the network with increased larval and reproductive output.

In the coming decades, ocean temperature thresholds will be exceeded more often because of the combination of marine heatwaves and long-term warming.¹⁸ The inclusion of a diversity of upwelling regimes and habitat types in California's MPA network, such as those in the mainland and Channel Island MPAs, is thought to offer additional insurance against changing conditions.¹⁹ As a general matter, ensuring proper spacing, placement, and consequently connectivity of southern mainland MPAs is increasingly important in light of climate change.²⁰

¹¹ University of California Natural Reserve System, "Carpinteria Salt Marsh," accessed September 2023, <https://ucnrs.org/reserves/carpinteria-salt-marsh-reserve/>.

¹² Levenbach, Stuart. 2008. "Community-Wide Ramifications of an Associational Refuge on Shallow Rocky Reefs." *Ecology* 89 (10): 2819–28. <https://doi.org/10.1890/07-0656.1>.

¹³ SeaSketch, "California MPA Petitions," <https://www.seasketch.org/california/app>. Accessed March 11, 2025.

¹⁴ SeaSketch, "California MPA Petitions," <https://www.seasketch.org/california/app>. Accessed March 11, 2025.

¹⁵ Jennifer E. Caselle, et al., "A Synthesis of Ecological and Social Outcomes from the California Marine Protected Area (MPA) Network", 2023, https://opc.ca.gov/wp-content/uploads/2023/01/NCEAS_MPA_Report_Final.pdf.

¹⁶ CDFW Decadal Management Review 2022; Yeager ME, et al., *Assessing connectivity across the California Marine Protected Area Network*, 2023, <https://opc.ca.gov/wp-content/uploads/2024/10/MPA-Connectivity-Final-Report-508.pdf>.

¹⁷ Yeager et al. 2023.

¹⁸ Frölicher, Thomas L., Erich M. Fischer, and Nicolas Gruber. 2018. "Marine Heatwaves under Global Warming." *Nature* 560 (7718): 360–64. <https://doi.org/10.1038/s41586-018-0383-9>; Laufkötter, Charlotte, Jakob Zscheischler, and Thomas L. Frölicher. 2020. "High-Impact Marine Heatwaves Attributable to Human-Induced Global Warming." *Science* 369 (6511): 1621–25. <https://doi.org/10.1126/science.aba0690>.

¹⁹ Shelby L. Ziegler et al. 2023, "Marine Protected Areas, Marine Heatwaves, and the Resilience of Nearshore Fish Communities," *Scientific Reports* 13, no. 1 (January 25, 2023): 1405, <https://doi.org/10.1038/s41598-023-28507-1>.

²⁰ Carr et al. 2017

2. Habitat attractive to White Sharks (see Appendix A for further detail)

The habitat distribution for the northeast Pacific population of white sharks is broad, spanning from Baja California to a point northwest in the Bering Sea off the Aleutian Islands.²¹ However, research suggests that juveniles of this population are utilizing a narrower band of coastal waters for nursery habitat, stretching from the Southern California Bight to Baja.²² Spatial data of white shark movements show that in areas off Carpinteria, JWS form aggregations for periods of weeks to months.²³ These spatial patterns suggest that this habitat attracts JWS, and that the area serves as an important white shark nursery.

White sharks are listed under Appendix II of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES).²⁴ The species is slow to reach reproductive maturity and produces only a small number of young each year, making it vulnerable to human stressors.²⁵ Research conducted in the Southern California Bight has found that fisheries bycatch is likely the main source of mortality for JWS.²⁶ Another factor threatening white sharks is a warming climate and ocean that has led to many species' historic distribution changing.

Juvenile white sharks inhabit a narrow habitat range, choosing shallow habitats (< 1000 m deep) close to land (< 30 km of the shoreline) in waters ranging from 14 to 24°C.²⁷ They can form aggregations at these ideal locations and display a high degree of residency.²⁸ Historically, Southern California was a suitable habitat eight months of the year, while coastal habitats in Baja California were suitable year-round.²⁹ Recent research shows that the average observed white shark density in Carpinteria increased significantly across three years beginning in 2019.³⁰ Utilizing detection data, a study found a JWS hot spot at Padaro Beach in Carpinteria in the months from May to December in 2020.³¹ In this study, the tagged individuals were observed across a stretch of coastline from Loon Point south to Carpinteria State Beach.³² Padaro Beach was classified as an ideal JWS aggregation spot due to its sandy beach with a rocky reef adjacent to an estuary inlet and low wave energy compared to many of the other nursery habitats available.³³ Although it was previously believed that JWS do not show site fidelity, there is growing evidence that the Southern California Bight is a region of primary nursery habitat,

²¹ Office of National Marine Sanctuary, "White Shark Conservation, White Shark Stewardship Project," Government Website, Greater Farallones National Marine Sanctuary, accessed November 17, 2023, https://farallones.noaa.gov/eco/sharks/sharks_conservation.html.

²² Anderson, James M., et al., 2021. "Interannual Nearshore Habitat Use of Young of the Year White Sharks Off Southern California." *Frontiers in Marine Science* 8 (March). <https://doi.org/10.3389/fmars.2021.645142>.

²³ Anderson et al. 2021; Spurgeon, Emily, et al., 2022. "Quantifying Thermal Cues That Initiate Mass Emigrations in Juvenile White Sharks." *Scientific Reports* 12 (1): 19874. <https://doi.org/10.1038/s41598-022-24377-1>.

²⁴ Office of National Marine Sanctuary 2023.

²⁵ Ibid.

²⁶ Benson, John F., et al., 2018. "Juvenile Survival, Competing Risks, and Spatial Variation in Mortality Risk of a Marine Apex Predator." *Journal of Applied Ecology* 55 (6): 2888–97. <https://doi.org/10.1111/1365-2664.13158>.

²⁷ White, Connor F. et al., 2019. "Quantifying Habitat Selection and Variability in Habitat Suitability for Juvenile White Sharks." *PLOS ONE* 14 (5): e0214642. <https://doi.org/10.1371/journal.pone.0214642>.

²⁸ Lyons, Kady, et al., 2013. "The Degree and Result of Gillnet Fishery Interactions with Juvenile White Sharks in Southern California Assessed by Fishery-Independent and -Dependent Methods." *Fisheries Research* 147 (October):370–80. <https://doi.org/10.1016/j.fishres.2013.07.009>.

²⁹ Ibid.

³⁰ John K. Parsons, "Using Unoccupied Aerial Vehicles to Uncover Patterns of Density, Size Structure, and Distribution of White Sharks (*Carcharodon Carcharias*) at a Southern California Coastal Aggregation Site" (UC Santa Barbara, 2022), <https://escholarship.org/uc/item/2f74m5fz>.

³¹ Spurgeon et al. 2022.

³² Ibid.

³³ Ibid.

with specific “hotspots” like Carpinteria attracting fairly stable aggregations, and that the suitability of the habitat has been increasing relative to areas further south as a result of climate change.

3. The Importance of Tribally led Marine Stewardship and Tribal Co-Management

The Marine Life Protection Act (MLPA) did not direct how state agencies were to engage or consult with Tribes during the establishment process of California’s MPA network, and does not acknowledge coastal Indigenous peoples’ long-standing relationships to, dependence on, and stewardship of marine resources.³⁴ During the MLPA implementation process, there were opportunities for Tribes to engage in stakeholder groups through the Blue Ribbon Task Force and regional stakeholder process. However, Tribes are sovereign nations and require government-to-government consultation. These factors resulted in California Tribes’ initial opposition to the creation of the MPA network – many Tribes were fearful the MLPA could restrict Indigenous cultures and ways of life.

By the time the MLPA planning process came to the fourth and final coastal region, the North Coast, Tribes in the North were raising concerns about the lack of an official consultation with Tribal Nations on MPA designations in their ancestral waters. This resulted in state agencies implementing a consultation process that included Tribes as sovereigns and creating the exemption of “Tribal take,” to ensure that Tribes would retain access to their cultural and subsistence resources.³⁵ In the years following the MPA network’s implementation, Tribes, state agencies, and policymakers have made extensive progress to encourage and facilitate Tribal marine co-management and access in MPAs.³⁶

Now, as California is conducting its first-ever adaptive management process, there is an opportunity to more thoroughly include the groups that were underrepresented during the initial implementation of the network, both Tribal and non-Tribal entities. This petition and Petition 2023-19MPA for the Chitqawi SMCA are the first Tribally proposed state MPAs in California. Designating this MPA would strengthen the role and authority of California Tribes in the state’s ocean and marine life protection efforts. With co-management, the Mishopshno MPA would also contribute to the integration of Tribes in California’s marine monitoring and management initiatives. Furthermore, this proposal aligns with the state’s goal of supporting Tribally led conservation.³⁷

Socioeconomic Considerations

This area holds special importance for residents and visitors engaging in ocean and coastal recreation, for local Chumash people engaging in cultural and subsistence practices, and for commercial and recreational fishers.

³⁴ Curtis G. Berkey & Scott W. Williams, 2019, “California Indian Tribes and the Marine Life Protection Act: The Seeds of a Partnership to Preserve Natural Resources,” 43 AM. INDIAN L. REV. 307, <https://digitalcommons.law.ou.edu/ailr/vol43/iss2/2>; California Marine Life Protection Act. https://leginfo.ca.gov/faces/codes_displayText.xhtml?lawCode=FGC&division=3.&title=&part=&chapter=10.5.&article=

³⁵ Berkey and Williams 2019

³⁶ McGinnis 2022

³⁷ “30x30: Conserving 30% of California’s Coastal Waters by 2030 - California Ocean Protection Council.” California Ocean Protection Council, 7 Jan. 2025, opc.ca.gov/30x30/.

Carpinteria is a popular area for surfers, swimmers, kayakers, birdwatchers, beach walkers, freedivers, shore fishers, and more. For instance, there are multiple surf schools in the area, and vessels cluster along the shore during the summer to observe JWS.³⁸ By making the ocean healthier and more resilient to climate change, strong marine protections help safeguard everyone's ability to enjoy these areas through a variety of recreational activities, far into the future. Enhanced ocean protections can also benefit our economy, as millions of visitors travel to California's iconic coastline each year to recreate and enjoy a healthy ocean, supporting our state's blue economy. In 2023, ocean tourism brought just over \$2 billion in travel-related spending to Santa Barbara County and supported more than 20,000 jobs.³⁹

One of the primary goals of this SMCA is to honor the Chumash people's cultural heritage and continued relationship with their ancestral lands and waters. Many culturally significant species for the Chumash are found in Carpinteria and the area proposed for protection, including but not limited to: sheep and kelp crab, Giant keyhole limpet, California mussel, Pacific sand dollar, several octopus species, wavy turban snail, California cone snail, harbor seal, leopard shark, brown pelican, Heerman's gull, Brandt's cormorant, double-crested cormorant, and more.⁴⁰ As mentioned previously, Chumash tomol paddlers use the beaches and waters of the Carpinteria area to practice for their annual crossing to Limuw, also known as Santa Cruz Island. Local Chumash people also fish from shore for cultural, recreational, and subsistence purposes, typically using hook-and-line gear.

This is a popular area for recreational fishing as well. The sandy shores of Santa Claus and Padaro Beaches are known as particularly desirable surf fishing locations. Carpinteria Reef and its associated kelp forest provide critical habitat for many marine species, including several targeted by recreational fishers.⁴¹ The nearby sandy beaches provide a safe entry point for people entering the water in California's often challenging coastal ocean conditions (e.g. large surf or swell), making this area a popular spearfishing and freediving location. Spearfishing can have a substantial negative effect on populations of marine fishes with small home ranges due to the targeted selection of larger individuals, which have the highest reproductive output. Some popular spearfishing and freediving targets, such as California sheephead, many species of rockfish, kelp bass (also known as calico bass), and California spiny lobster, have small home ranges and have been shown to benefit from the protections of California MPAs.⁴²

Commercial fishing and fishing by commercial passenger fishing vessels (CPFVs) also occurs in this area. The proposed Mishopshno SMCA makes up 18% of California fishing block number 652. According to publicly available data accessed via the Marine Fisheries Data Explorer (MFDE), commercial fishing in this block represents an extremely small proportion of landings for the Santa Barbara Port Area, both by weight and value. In 2023, landings from fishing block 652 represented 0.22% of total landings by weight, and 1.1% of total landings by value, reported

³⁸ Personal communications to local businesses and residents, February – March 2025.

³⁹ Visit California, 2024. The Economic Impact of Travel in California.

<https://industry.visitcalifornia.com/research/economic-impact>.

⁴⁰ Wishtoyo Foundation 2004; Santa Barbara Coastal LTER Data Catalog, <https://sbclter.msi.ucsb.edu/data/catalog/>, accessed September 2023.

⁴¹ While our request to CDFW for recreational lobster fishing data from this area was being processed at time of submission, several conversations with local fishers confirm that Carpinteria Reef is a popular area for recreational lobster fishing by hand.

⁴² California MPA Long Term Monitoring Program Final Reports: 1) Carr et al. 2021, Monitoring and Evaluation of Kelp Forest Ecosystems in the MLPA Marine Protected Area Network, https://caseagrant.ucsd.edu/system/files/2022-06/Kelp%20Forest%20Technical%20Report%20Narrative_v2.pdf 2) Hamilton et al. California Collaborative Fisheries Research Program (CCFRP) – Monitoring and Evaluation of California Marine Protected Areas. https://caseagrant.ucsd.edu/sites/default/files/CCFRP_Final_Report.pdf.

for the Santa Barbara Port Area from Southern California waters.⁴³ Over the previous ten-year period from 2013-2023, fisheries landings from fishing block 652 represented 0.16% of total landings by weight, and 0.63% of total landings by value, reported for the Santa Barbara Port Area from Southern California waters.

The MDFE data shows fishing block 652 represents a very small percentage of landings for halibut and California spiny lobster as well, which are both important commercial fisheries in the area. In 2023, halibut landings from block 652 represented 0.5% of total halibut landings by weight, and 0.6% of total halibut landings by value for the Santa Barbara Port Area.⁴⁴ Over the previous ten-year period from 2013-2023, halibut landings from this block represented 4.3% of total halibut landings by weight, and 3.9% of total halibut landings by value for the Santa Barbara Port Area. In 2023, California spiny lobster landings from block 652 represented 2.2% of total lobster landings by weight, and 2.2% of total lobster landings by value for the Santa Barbara Port Area. Over the previous ten-year period from 2013-2023, California spiny lobster landings from this block represented 2% of total lobster landings by weight, and 1.9% of total lobster landings by value for the Santa Barbara Port Area from Southern California waters.

Considering the above data and the size of the proposed Mishopshno SMCA, which makes up 18% of fishing block 652, we anticipate that closing this area to commercial fishing would have limited impact on overall commercial fisheries landings for the Santa Barbara Port Area. Overall, regional and statewide fishery landings and values were not negatively impacted by California's MPAs.⁴⁵ The commercial California spiny lobster fishery in the Santa Barbara region has seen significant benefits from MPAs – commercial landings more than doubled in the six years after local MPAs were established, with fishermen able to “fish the line” to intercept mature lobster leaving the MPAs.⁴⁶ A 35% reduction in fishing area resulted in a 225% increase in total catch, “indicating at a local scale that the trade-off of fishing ground for no-fishing zones benefitted the fishery.”⁴⁷

However, we are sensitive to the fact that the proposed MPA would limit some fishing access in the Carpinteria area and understand that these data above do not necessarily mean an MPA designation would not have an impact on individual fishers and businesses. In 2023, the latest year with data available, a total of 15 fishers, 19 businesses, and 16 vessels reported landings from fishing block 652. With this in mind, discussions with local fishers and fishing representatives have helped to further characterize the nature and spatial distribution of fishing in the area proposed for protection. We have amended the proposed SMCA's size and boundaries to exclude some of the preferred fishing areas and reduced the proposal as much as the Master Plan's scientifically informed size guidelines allow (see “Boundary Description” below).⁴⁸

⁴³ Southern California waters defined as all fishing blocks from Point Conception to the US-Mexico border (blocks 652-2035):

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=227793&inline>.

⁴⁴ Including California halibut, Pacific halibut, and “Unspecified halibut” as reported in the MFDE

⁴⁵ Murray, Samantha, and Tyler T. Hee. 2019. “A Rising Tide: California's Ongoing Commitment to Monitoring, Managing and Enforcing Its Marine Protected Areas.” *Ocean & Coastal Management* 182 (December):104920. <https://doi.org/10.1016/j.ocecoaman.2019.104920>.

⁴⁶ Lenihan, Hunter S., et al., 2021. “Evidence That Spillover from Marine Protected Areas Benefits the Spiny Lobster (*Panulirus interruptus*) Fishery in Southern California.” *Scientific Reports* 11 (1): 2663. <https://doi.org/10.1038/s41598-021-82371-5>.

⁴⁷ Lenihan et al. 2021

⁴⁸ CDFW Master Plan for Marine Protected Areas 2016, Appendix A, page A-35.

Private conversations and publicly available data from MFDE show that commercial and recreational vessels in the Santa Barbara port area primarily visit the Channel Islands for fishing trips and target the nearshore area around Carpinteria when weather conditions make travel to the islands unsafe or undesirable. According to several fishers with knowledge of the area, fishing near Carpinteria Reef is often considered dangerous for vessels due to its shallow depth. Navigational charts and observations of breaking waves on the reef structure during certain conditions substantiate these accounts. Several commercial and recreational fishers noted that Armpit Reef, a hard-bottom structure located offshore of Carpinteria Reef, is a desirable and productive fishing location in the area that is fished when the islands are otherwise inaccessible. To preserve this option, we changed the southern boundary of the proposed Mishopshno SMCA so that Armpit Reef lies outside of the MPA boundaries, thereby maintaining locally accessible and frequented fishing locations for individual commercial and recreational vessels fishing in the area.

As stated in the original Mishopshno SMCA proposal, this MPA would allow for public access, all non-consumptive activities, and a Tribal take exemption for the SYBCI to fish with the use of hand-based equipment. After subsequent discussions with local stakeholders and Tribal members related to the consumptive activities noted above, we are proposing the below amendments to the original petition. These amendments will help limit direct, near-term impacts to extractive activities to the greatest extent possible, while still adhering to the Master Plan science-based size criteria and guidance around high levels of protection:

- Allow for the recreational take of finfish from shore using hook-and-line, promoting access to certain important marine and cultural resources for all Chumash people – including non-federally recognized Tribes
- Allow for recreational take of finfish from shore using hook-and-line for the public.
- Establish boundaries for the SMCA that leave Armpit Reef, the easternmost edge of Carpinteria Reef, and the associated kelp forest outside of the MPA's boundaries to allow for continued recreational and commercial fishing access to certain important local fishing grounds.

See “Boundary Description” and “Proposed Regulations” for more detail.

Conclusion

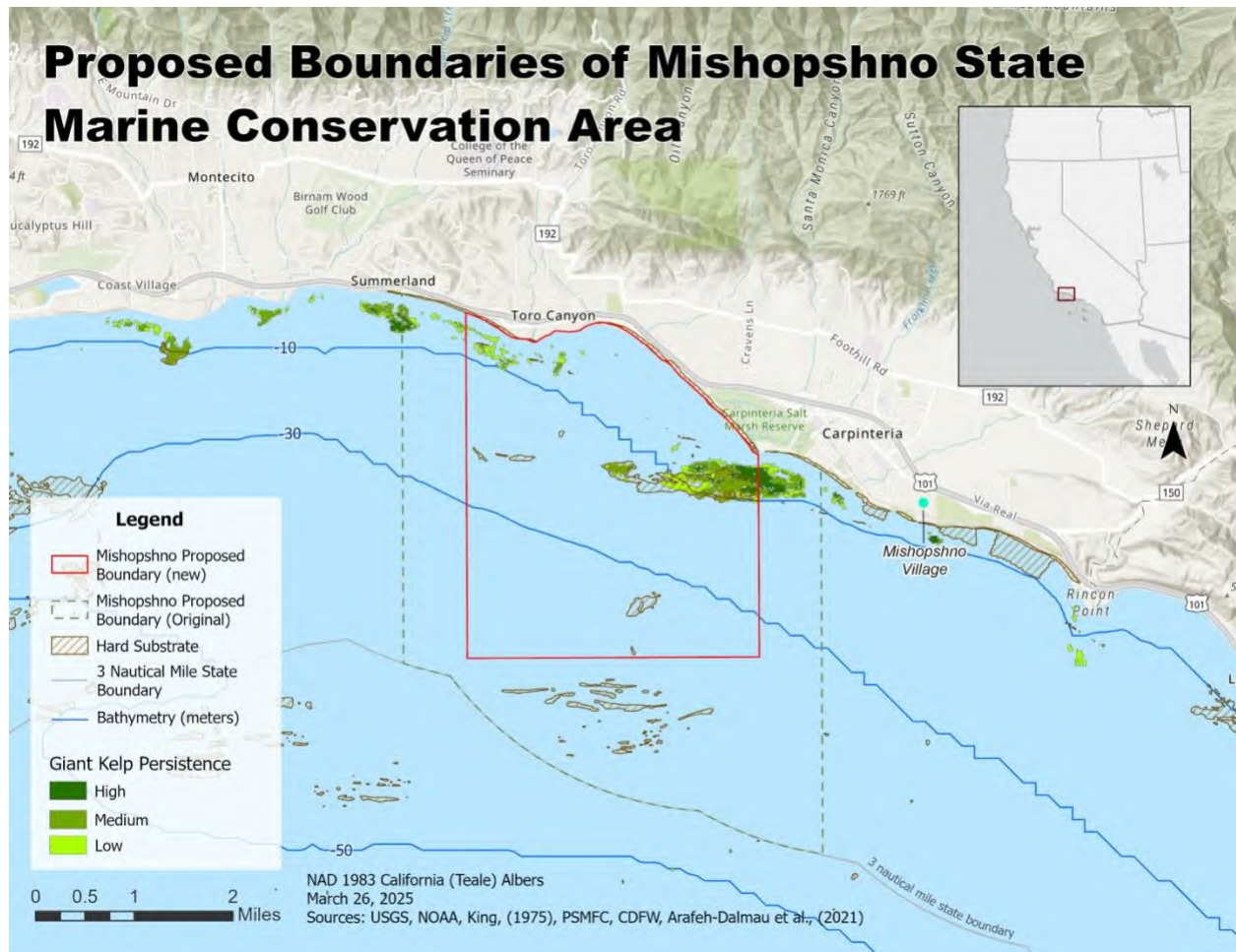
The proposed MPA would address a physical gap in the MPA network and increase the proportion of rocky reef habitat in the southern portion of the MPA network. Research focused on JWS has shown the waters off Carpinteria are a frequent hotspot for juvenile white sharks, offering specific habitat features that support this critical life stage. The proposed MPA would allow some forms of recreational fishing within its boundaries, and its boundaries are designed to allow fishing access to a popular offshore rocky reef area while still meeting the MLPA Science Advisory Team criteria and having a high level of protection. Finally, designation of the proposed MPA would add a new Tribal MPA in the region, strengthening the role of the Tribes in co-management, monitoring, and marine education activities.

Boundary Description

The proposed boundaries of the SMCA were informed by extensive outreach and discussions with local Tribes and fishers. The proposed boundaries meet a difficult-to-achieve compromise between upholding science-based size and area criteria,⁴⁹ protecting critical habitat and

⁴⁹ CDFW Master Plan for Marine Protected Areas 2016, Appendix A, page A-35.

promoting connectivity for the broader network, while allowing continued fishing access to important local fishing areas.



The western boundary is located at 119.54W, extending from the shore at Summerland to 34.37N. The eastern boundary is located at 119.58W, extending from the coast at Franklin Creek (also known as Santa Monica Creek) to 34.37N.

Area: 9.05 square miles

Shore adjacent distance: 3.63 miles

MPA coordinates:

1. SE: 119.53589W long. 34.366106N lat.
2. NE: 119.53589W long. 34.395977N lat.
3. NW: 119.587711W long. 34.416944N lat.
4. SW: 119.587711W long. 34.366106N lat.

The eastern boundary, located at the eastern shore of Santa Monica Creek at Salt Point, would ensure the protection of important habitat and food sources for JWS at the mouth of the Carpinteria Salt Marsh. This eastern boundary would allow for continued fishing access to the eastern edge of Carpinteria Reef and the eastern portion of its associated kelp forest. This eastern portion of the reef is a known popular fishing area for recreational fishers, especially

those who access the reef and kelp bed from the downshore sandy beach using public parking areas nearby. This placement would also provide a known, easily recognizable landmark and shoreline feature as the starting point for the eastern boundary of this MPA, allowing for a common, easily referenced understanding of this boundary per CDFW guidelines.⁵⁰

The southern boundary would ensure protection of the ecologically important nearshore rocky reef and kelp habitat of Carpinteria Reef while allowing access to the popular fishing area offshore called Armpit Reef.

The western boundary, located just west of Loon Point, would ensure the protection of important sandy-bottom habitat for JWS off Padaro Beach and additional hard-bottom substrate and kelp forest cover around Loon Point. In addition to conserving these important habitats, the revised western boundary at this location would ensure the SMCA meets the Master Plan minimum size and spacing guidelines while allowing continued fishing opportunities in the areas west of Loon Point.

As described above, the proposed SMCA boundaries adhere to the Master Plan design guidelines. The designation of an SMCA that is smaller than these minimum size guidelines would hinder the area's ability to meet the design objectives and MLPA goals for which they were developed: protect adult populations; protect the diversity of species that live at different depths; and accommodate the movements of individuals across depth zones (MLPA goals 2 & 6).⁵¹ It is therefore imperative that the SMCA be no smaller than these recommended minimum size guidelines.

Proposed Regulations

This petition proposes the following regulations for an SMCA for the region outlined above:

Take of all living, geological, or cultural marine resources is prohibited except:

1. *The following federally recognized tribe is exempt from the area and take regulations found in subsection 632(b)(9) of these regulations and shall comply with all other existing regulations and statutes:
The federally recognized tribe of the Santa Ynez Band of Chumash Indians.
Within the proposed SMCA, the Chumash would be allowed to fish with the use of hand-based equipment. The proposed exemptions would be consistent with allowing Tribal take exemptions as currently defined in Title 14, §632(a)(11), which identify how a member of a federally recognized Tribe may be authorized to take living marine resources from an MPA with site-specific take restrictions. Members taking living marine resources under this provision are subject to current seasonal, bag, possession, gear and size limits in existing Fish and Game Code statutes and regulations of the Commission, except otherwise provided for in Title 14, §632(b).*
2. *Scientific research pursuant to the MLPA regulations for SMCAs (14 C.F.R. section 632(a)(1)(C) is allowed.*
3. *Recreational take of finfish by hook-and-line from shore is allowed.*

⁵⁰ CDFW Master Plan for Marine Protected Areas 2016; Saarman et al. 2013

⁵¹ CDFW Master Plan for Marine Protected Areas 2016, Appendix A.

These regulations would allow access to the area for scientific research and allow some recreational take using a low-impact gear type.⁵² The regulations would allow use of shoreline and marine resources for traditional, ceremonial, cultural, and subsistence purposes for the SYBCI and for non-federally recognized Chumash people. The state should consult with the SYBCI to formalize a co-management agreement for the SMCA. The SYBCI will work to include non-federally recognized Tribal members in the management of the area. With the regulations detailed above, the Mishopshno SMCA would qualify as a “highly protected” MPA according to science-based criteria set forth by The MPA Guide.⁵³ Research shows that fully and highly protected MPAs are more likely to benefit populations of targeted species, protect high levels of biodiversity, and promote ecosystem resilience.⁵⁴

⁵² Single lines (hooks, pole and line, rod, troll) and low-impact traditional extraction are identified by The MPA Guide as small-scale, selective gear with low impact and therefore compatible with highly protected MPAs. Grorud-Colvert, Kirsten, et al. 2021. “The MPA Guide: A Framework to Achieve Global Goals for the Ocean.” Science, September. <https://doi.org/10.1126/science.abf0861>.

⁵³ Grorud-Colvert et al. 2021

⁵⁴ Grorud-Colvert et al. 2021

Proposed Boundaries of Mishopshno State Marine Conservation Area

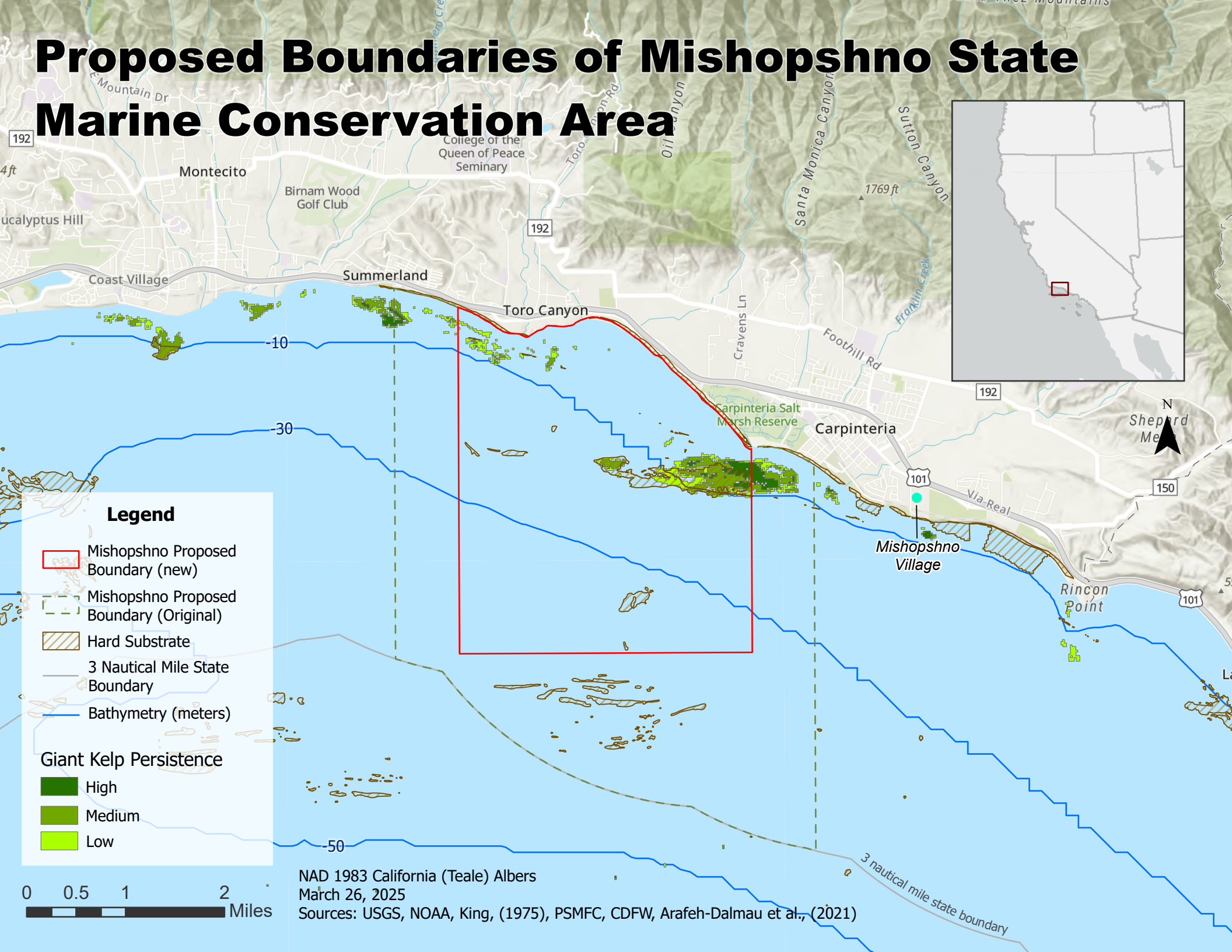
Legend

- Mishopshno Proposed Boundary (new)
- Mishopshno Proposed Boundary (Original)
- Hard Substrate
- 3 Nautical Mile State Boundary
- Bathymetry (meters)

Giant Kelp Persistence

- High
- Medium
- Low

NAD 1983 California (Teale) Albers
 March 26, 2025
 Sources: USGS, NOAA, King, (1975), PSMFC, CDFW, Arafeh-Dalmau et al., (2021)



March 26, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Submitted electronically to fgc@fgc.ca.gov

RE: Amendments to Petition 2023-29MPA: Mishopshno State Marine Conservation Area

Dear President Zavaleta and Honorable Commissioners:

In 2023, the Santa Ynez Band of Chumash Indians (SYBCI), Environmental Defense Center (EDC), and Natural Resources Defense Council (NRDC) submitted petition 2023-29MPA to the Fish and Game Commission (FGC) proposing a California-Chumash co-managed marine protected area (MPA) off the coast of Carpinteria, to be named Mishopshno State Marine Conservation Area (SMCA) after the ancestral Chumash village located in the area.

Given the significance of the area to the Chumash people and the important scientific research and monitoring being conducted within the proposed boundary, the original petition proposed the following suggested regulations:

Take of all living, geological, or cultural marine resources is prohibited except:

- 1. The following federally recognized tribe is exempt from the area and take regulations found in subsection 632(b)(9) of these regulations and shall comply with all other existing regulations and statutes: The federally recognized tribe of the Santa Ynez Band of Chumash Indians. Within the proposed SMCA, the Chumash would be allowed to fish with the use of hand-based equipment. The proposed exemptions would be consistent with allowing tribal take exemptions as currently defined in Title 14, §632(a)(11), which identify how a member of a federally recognized tribe may be authorized to take living marine resources from an MPA with site-specific take restrictions. Members taking living marine resources under this provision are subject to current seasonal, bag, possession, gear and size limits in existing Fish and Game Code statutes and regulations of the Commission, except otherwise provided for in Title 14, §632(b).*
- 2. Scientific research pursuant to the MLPA regulations for SMCAs. (14 C.F.R. section 632(a)(1)(C).*

Since January 2024, our Tribal Nation and our two organizations have conducted over 100 in-person, video and phone meetings with community members and interested parties to discuss the Mishopshno SMCA proposal. These conversations have improved our understanding of the Carpinteria area, highlighted community support for protecting the coastal waters, and shaped our supplemental site-specific research. Our discussions with local Tribes, Tribal organizations, and fishers in particular have informed our decision to amend the original petition submitted to the FGC.

We developed the amendments to Petition 2023-29MPA to ensure non-federally recognized Tribes retain shore fishing access, and to limit direct, near-term impacts to extractive activities to the greatest extent possible, while still adhering to the Master Plan science-based design criteria and guidance around high levels of protection. Our amended proposed regulations are:

- Allow for the recreational take of finfish from shore using hook-and-line, promoting access to certain important marine and cultural resources for all Chumash people – including non-federally recognized Tribes;
- Allow for recreational take of finfish from shore using hook-and-line for the public;
- Reduce the SMCA in size to 9 square miles, with boundaries that leave Armpit Reef, the easternmost edge of Carpinteria Reef, and the eastern portion of the kelp forest associated with Carpinteria Reef outside of the MPA's boundaries, to allow for continued recreational and commercial fishing access to certain important local fishing grounds.

These amendments are supplemental to the amendment submitted on February 9, 2024, which excluded the Carpinteria Salt Marsh Reserve from the proposed Mishopshno SMCA boundaries given its existing protection and management under the UC Natural Reserve System.

We hope these amendments, which are informed by the additional insight and information gathered through our outreach efforts with local communities and interested parties, encourage the Commission to approve the Mishopshno SMCA.

Thank you for your consideration.

Sincerely,

Sam Cohen
Government Affairs and Legal Officer
Santa Ynez Band of Chumash Indians

Azsha Hudson
Marine Conservation Analyst & Program Manager
Environmental Defense Center

Sandy Aylesworth
Director, Pacific Initiative, Nature
Natural Resources Defense Council



Tracking Number: (2023-33MPA_AM1)

To request a change to regulations under the authority of the California Fish and Game Commission (Commission), you are required to submit this completed form to: California Fish and Game Commission, (physical address) 1416 Ninth Street, Suite 1320, Sacramento, CA 95814, (mailing address) P.O. Box 944209, Sacramento, CA 94244-2090 or via email to FGC@fgc.ca.gov. Note: This form is not intended for listing petitions for threatened or endangered species (see Section 670.1 of Title 14).

Incomplete forms will not be accepted. A petition is incomplete if it is not submitted on this form or fails to contain necessary information in each of the required categories listed on this form (Section I). A petition will be rejected if it does not pertain to issues under the Commission's authority. A petition may be denied if any petition requesting a functionally equivalent regulation change was considered within the previous 12 months and no information or data is being submitted beyond what was previously submitted. If you need help with this form, please contact Commission staff at (916) 653-4899 or FGC@fgc.ca.gov.

SECTION I: Required Information.

Please be succinct. Responses for Section I should not exceed five pages

1. Person or organization requesting the change: Environment California Research and Policy Center and Azul

Name of primary contact person: Laura Deehan, Environment California

Address: 3435 Wilshire Blvd., Suite 385, Los Angeles, CA, 90010

Telephone number: [REDACTED]

Email address: [REDACTED]

2. Rulemaking Authority (Required) - Reference to the statutory or constitutional authority of the Commission to take the action requested: Authority cited: Sections 200, 205(c), 265, 399, 1590, 1591, 2860, 2861 and 6750, Fish and Game Code; and Sections 36725(a) and 36725(e), Public Resources Code.

3. Overview (Required) - This joint petition from Environment California and Azul requests minor or modest expansions for 6 state MPAs and the designation of one new State Marine Park in order to enhance protections for California's kelp forests – a critical ecosystem and habitat type that provides myriad benefits for both human and marine communities, and which has experienced significant declines in the last decade due to natural and human-related causes. In particular, the regulation changes put forth in this petition seek to enhance protections for resilient, stable, and persistent kelp forest patches as identified by recent analyses and peer-reviewed research. Proposed boundary and regulation changes include (see Table 1):

- i. Cabrillo SMR - expand westward and northward by ~~15.2 sq mi~~ ~9.9 sq mi
- ii. Point Dume SMCA - expand westward by 4.6 sq mi
- iii. South Point SMR - expand westward by 26.3 sq mi
- iv. Gull Island SMR - expand northward by 1.8 sq mi
- v. Point Conception SMR - expand eastward by 14.6 sq mi



vi. Natural Bridges SMR - expand southward by ~~13.7 sq mi~~, eastward to the edge of Natural Bridges State Beach by ~14.5 sq mi

vii. Pleasure Point, Santa Cruz - designate 3.2 sq mi as a new State Marine Reserve Conservation Area

4.. **Rationale (Required)** - The state of California has experienced significant losses of its kelp forest cover since the designation of the MPA network. While we could not know which areas would persist in the face of extreme threats at the time the MPA network was originally established, new data and research has since helped to identify kelp beds that have persisted and are most resilient in the face of climatic and other disturbances. Enhancing protections for the state's most resilient, stable, and persistent kelp forest patches now will allow us to preserve what we have left, and increase our chances of restoration in the future. Removing, to the extent possible, direct human impacts on these resilient kelp forests that are potential climatic refuges will not only help these areas persist, but will also enhance the state's restoration efforts for other kelp forests in decline. By focusing resources on the immediate protection of already identified important areas with outsized conservation benefits, the state can advance the goals of the Marine Life Protection Act, advance the new 30x30 target, and take a cost-effective approach to kelp restoration by protecting the natural regeneration potential of kelp forest ecosystems statewide.

See Petition Narrative attached for comprehensive rationale and methods behind site selection.

Primary contacts:

Laura Deehan, Environment California, [REDACTED]

Marcela Gutiérrez-Graudiņš, Azul, [REDACTED]

SECTION II: Optional Information

5. Date of Petition: 11/29/23

AMENDED 3/14/2025

6. Category of Proposed Change

☐ Sport Fishing

☐ Commercial Fishing

☒ Hunting

☐ Other, please specify: MPAs, Section 632.

7. The proposal is to: (To determine section number(s), see current year regulation booklet or

~~<https://govt.westlaw.com/calregs>~~)

☐ Amend Title 14 Section(s): [Westlaw regulations](#).

☐ Add New Title 14 Section(s): Click here to enter text.

☐ Repeal Title 14 Section(s): Click here to enter text.

8. If the proposal is related to a previously submitted petition that was rejected, specify the tracking number of the previously submitted petition ~~Click here to enter text~~. Or ☐ Not applicable.



9. **Effective date:** If applicable, identify the desired effective date of the regulation. If the proposed change requires immediate implementation, explain the nature of the emergency: As soon as is practicable for the State of California
10. **Supporting documentation:** Identify and attach to the petition any information supporting the proposal including data, reports and other documents:
- Petition Narrative ([Amended](#))
 - Appendix A - Highly persistent kelp beds and “medium priority” restoration sites warranting protection with expanded California MPAs, as identified by Ospina-Giraldo et al. 2023 and Arafeh-Dalmau et al. 2021
 - Table 1 - Proposed Boundary and Regulation Changes
 - [Table 2 - Amended Proposed Boundary and Regulation Changes](#)
 - Appendix B - Letters of support:
 - [Petition signed by over 10,000 members of the public, collected in 2024](#)
 - [Petition signed by 6,000 members of the public, collected by CALPIRG Students](#)
 - [Updated letters \(2\) from 52 scientists](#)
 - [Updated letter from 17 businesses](#)
 - Petitioner's letter of support
 - Joint letter from Drs. Nur Arafeh-Dalmau, Fiorenza Micheli, Kyle Cavanaugh, Dawn Murray, and Carolina Olguin-Jacobson
 - Letter from Dr. Tom Bell, Woods Hole Oceanographic Institute
 - Letter from Hannah Nevins, Santa Cruz seabird biologist
 - Joint letter from 27 scientists, researchers, and educators
 - Letter from Assemblymember Dawn Addis, 30th District
 - Letter from Fred Keeley, Mayor of Santa Cruz
 - Joint letter from 21 NGOs
 - Letter from Environmental Action signed by 2,487 members of the public
 - Letter signed by 214 CALPIRG students
 - Letter from 4 California college student leaders
 - Petition signed by over 7,000 members of the public, [collected in 2023](#)
11. **Economic or Fiscal Impacts:** Identify any known impacts of the proposed regulation change on revenues to the California Department of Fish and Wildlife, individuals, businesses, jobs, other state agencies, local agencies, schools, or housing:
- Enhanced, long-term protection of highly resilient kelp forest areas will bolster the diverse stakeholders, interests and industries that benefit from our coastal marine resources. Low-impact, non-consumptive recreational activities such as diving, snorkeling, and surfing will be unaffected - and even enhanced - by expanded MPAs, which will also provide enhanced research and education opportunities. Short-term impacts to recreational and commercial fishermen will be outweighed by larger benefits in the future, as has been demonstrated here in California and around the world ([Bucaram et al. 2018](#), [Medoff et al 2022](#)). For example, an analysis of CDFW fisheries data found that regional and statewide fishery landings and values do not appear to have been negatively impacted by MPAs ([Murray and Hee 2019](#)), and an analysis of California spiny lobster fishery found that short-term losses were compensated for by a 225% increase in total catch after 6 years of MPA designation ([Lenihan et al. 2021](#)).
12. **Forms:** If applicable, list any forms to be created, amended or repealed:



SECTION 3: FGC Staff Only

Date received: 11/30/2023

AMENDED 3/14/2025

FGC staff action:

- ☐ Accept - complete
- ☐ Reject - incomplete
- ☐ Reject - outside scope of FGC authority

Tracking Number

Date petitioner was notified of receipt of petition and pending action: _____

Meeting date for FGC consideration: _____

FGC action:

- ☐ Denied by FGC
- ☐ Denied - same as petition _____

Tracking Number

- ☐ Granted for consideration of regulation change

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

March 14th, 2025

Re: Amendments to Petition to Modify CA Marine Protected Area Network to Enhance
Protections for California's Most Resilient Kelp Forests

Dear President Zavaleta and Honorable Commissioners,

Attached is Environment California Research & Policy Center & Azul's request to amend
Petition 2023-33MPA. We are amending four of the petition's seven actions following
conversations with community members and stakeholders.

We believe that these amendments will allow the state to balance long-term, strong protections
for stable kelp forest habitat areas with compatible community uses like shore-based subsistence
fishing, and create clarity at Natural Bridges around what uses are prohibited where.

On the following page, Table A ("Table A -- Cover message, Request to Amend Petition
2023-33MPA, Table of proposed amendments") outlines which action IDs we are seeking to
amend. Detailed descriptions of our proposed amendments and justifications can be found in
Table 2 ("Table 2-- Amendments to Petition to Modify the CA Marine Protected Area Network
to Enhance Protections for California's Most Resilient Kelp Forests"), where we have annotated
our changes in red underline and ~~black strikethrough~~. Our updated petition form, narrative and
appendix A, alongside new support letters are attached following those forms. Our request
concludes with the original support letters we submitted with Petition 2023-33MPA.

Thank you for this opportunity, and please reach out if you need any additional information.

Sincerely,

Laura Deehan
State Director
Environment California Research & Policy Center

Table A -- Cover message, Request to Amend Petition 2023-33MPA, Table of proposed amendments

Contact Organization	Petition Tracking Number	Unique Action ID	Affected MPA	MLPA Action Category (modify, establish, abolish)	Action Type	Action Category	Proposed Action	<u>Justification</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_1	Cabrillo State Marine Reserve (SMR)	Modify	Boundaries	Boundary change-expansion	Expand westward and northward by 15.2 sq mi <u>~9.99 sq mi</u>	<u>Stakeholder feedback--commercial fishers (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_2	Point Dume SMCA	Modify	Boundaries, <u>Regulations</u>	Boundary change-expansion, <u>regulatory change</u>	Expand westward by 4.6 sq mi	<u>Stakeholder feedback--recreational fishers (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_6	Natural Bridges SMR	Modify	Boundaries	Boundary change-expansion	Expand southward by 13.7 sq mi <u>14.5 sq mi</u>	<u>Stakeholder feedback--MPA collaborative (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_7	N/A	Establish	Establish new MPA	Establish new MPA	Designate 3.2 sq mi as a new SMR <u>SMCA</u> near Pleasure Point	<u>Stakeholder feedback--recreational fishers (see Table 2)</u>

**Petition to Modify the CA Marine Protected Area Network
to Enhance Protections for California's Most Resilient Kelp Forests**

Joint Submission by Environment California and Azul

PETITION NARRATIVE

Overview

California has experienced severe losses of its kelp forests since the designation of its statewide MPA network. At the time the MPA network was established, we could not know which kelp beds would be most resilient in the face of climate-related threats. However, in light of new data and research identifying the location of the state's persistent and stable kelp beds, adaptive management of the MPA network to better protect these kelp areas is therefore of critical importance.

This petition seeks to strengthen the statewide MPA network's protections for California's most resilient, stable, and persistent kelp forest patches – preserving what we have left now, to increase our chances of successful restoration in the future. Removing, to the extent possible, direct human impacts on these resilient kelp forests that are potential climatic refuges will not only help these areas persist, but will also enhance the state's restoration efforts for other kelp forests in decline. These efforts will also benefit kelp-forest dependent species, such as endangered Southern sea otters and threatened species of abalone. By focusing resources on the immediate protection of already identified important areas with outsized conservation benefits, the state can advance the goals of the Marine Life Protection Act, advance the new 30x30 target, and take a cost-effective approach to kelp restoration by protecting the natural regeneration potential of kelp forest ecosystems statewide.

Importance and decline of California's kelp forests

California's kelp forests provide numerous and invaluable ecological and environmental benefits. These underwater ecosystems serve as critical nurseries for a wide variety of marine species, providing shelter and food for numerous fish, invertebrates, and marine mammals, including the endangered Southern sea otter. Kelp acts as a natural water filter, as it absorbs excess nutrients and helps maintain water quality by reducing the risk of harmful algal blooms. Kelp forests may also play a role in carbon sequestration, capturing atmospheric carbon dioxide and helping to mitigate climate change. In addition to their ecological importance, kelp forests offer enormous cultural and economic benefits to California. They hold enormous cultural and economic significance for many of the Tribes and Indigenous communities that call California's coastal waters home. They support thriving commercial and recreational fisheries, contributing to the state's economy. The beauty and biodiversity of these forests attract tourists and divers, bolstering the state's tourism industry. Moreover, kelp can act as a buffer against coastal erosion, protecting shorelines from the damaging impacts of storms and waves.

However, kelp forests in California have experienced a significant decline in recent years due to a combination of natural and human-induced factors. One of the most important drivers of this

decline is the warming of ocean waters, which has been linked to climate change. Sustained elevated sea temperatures known as "marine heatwaves" have caused significant stress to kelp populations, leading to widespread loss of kelp stands, increased susceptibility of key urchin predators to disease, and exploding populations of herbivorous sea urchins. The recent 2014-2016 marine heatwave left California's kelp forests decimated, with over 90% of bull kelp reported lost in Northern California and significant losses reported across the state (Bell et al. 2023, Arafeh-Dalmau et al. 2023). Human activities have also played a role in the degradation of kelp forests. Overfishing and removal of key predators like sea otters, predatory fishes, California spiny lobster, rock crab, and sea stars have disrupted food webs and resulted in trophic cascades in these ecosystems, allowing herbivorous species to graze on kelp unchecked. Additionally, coastal development, pollution, and nutrient runoff degrade water quality and promote the growth of invasive species that outcompete native kelp. The loss of kelp cover across the state has widespread economic and ecological impacts, has led to the closure of the recreational red abalone fishery in Northern California and has hindered Southern sea otter population expansion, as great white shark bite mortalities increase where kelp cover has declined at the northern and southern edges of this iconic species' range (Nicholson et al. 2018, Moxley et al. 2019).

The decline of California's kelp forests since the time the MPA network was completed seriously threatens the state's marine biodiversity, fisheries, and overall ecological health and undermines the goals of the Marine Life Protection Act. This adaptive management review cycle is critically timed to respond to kelp loss. It is vital to increase protections immediately to confer as much resilience as possible to future disruptions.

MPAs and kelp forest conservation

Around the world, MPAs have been found to enhance the overall health and resilience of ocean ecosystems (Edgar et al. 2014, Jacquemont et al. 2022), and to promote long-term kelp forest stability (Peleg et al. 2023). By providing long-term protections for predator species within their boundaries - such as southern sea otters, California spiny lobster, rock crabs, wolf eels, and predatory fishes like California sheephead - MPAs help to regulate local populations of kelp consumers, thereby having cascading positive impacts on kelp growth and persistence (Eisaguirre et al. 2020, Kawamata & Taino 2021, House & Allen 2022, Heineke et al. 2023). Promoting intact food webs and natural ecological processes can also help to improve overall resilience in the face of other natural and man-made stressors that MPAs cannot directly mitigate, such as warming ocean temperatures and nutrient runoff (Roberts et al. 2017, Arafeh-Dalmau et al. 2023). Noting these benefits and abilities, the California MLPA specifically identified kelp forests as one of the habitats requiring greater protection ([MLPA Section 2856\(a\)\(2\)\(A\)](#)).

We have seen the benefits of long-term protection of California's kelp forests. The Decadal Management Review of the statewide MPA network found that, while kelp species across the state experienced large-scale declines during the 2014-2016 marine heatwave, "overall, kelp canopy was more stable and appeared to be more resilient inside MPAs" (CA MPA DMR 2022). The South Coast region's kelp forests, in particular – where fishing pressure was highest before the implementation of the MLPA – seem to have benefited from protections, with increases in

California sheephead and California spiny lobster within MPAs thought to help facilitate grazer suppression and lead to more stable giant kelp abundance during and after the marine heatwave (DMR Kelp Forest Technical Report 2021).

MPAs can also serve as a complementary management measure for kelp restoration. While California's MPAs were not explicitly designed with the restoration of kelp forests in mind, MPAs in general are considered a form of indirect kelp restoration due to their ability to promote intact food webs through reduced fishing pressure, which in turn helps to reduce kelp grazing pressure, as described above (Hopf et al. 2022). In addition, stable kelp forests help to promote natural regeneration of nearby areas, by providing a supply of propagules to recovering populations close by (Arafeh-Dalmau et al. 2021, Giraldo-Ospina et al. 2023). A recent global synthesis of kelp restoration found that the most successful restoration projects are those located near existing stable kelp forests (Eger et al. 2022). MPAs that protect these stable kelp forests can help to promote their continued persistence by removing extractive or destructive activities, and potentially further boost kelp restoration efforts by promoting healthy predator populations that “spillover” into nearby areas (e.g. Lenihan et al. 2021), helping to reduce grazer pressure in a broader area (Kawamata & Taino 2021). Harnessing the power of these dense, stable, and resilient kelp beds for the natural regeneration of nearby areas using area-based protection can also free up much-needed resources needed for intensive, direct restoration efforts elsewhere.

Based on this new and growing scientific evidence base, the state should protect more of California's most stable and resilient kelp forests now, in order to enhance the conservation benefits and ability of our statewide MPA network to meet the goals of the MLPA while giving kelp restoration efforts a leg up in the future.

Identifying resilient kelp forests in California

Since the creation of California's MPA network, new research has emerged utilizing satellite and in-situ data over a decades-long year timescale to identify the kelp forests exhibiting higher levels of persistence and stability in California.

A multi-institution team of researchers used satellite data to provide high-resolution maps of the most persistent giant kelp and bull kelp patches in California during the last 35 to 38 years (Arafeh-Dalmau et al. 2021, Arafeh-Dalmau et al. 2023). Importantly, these studies analyzed the extent to which highly persistent kelp patches are protected within the state's MPA network, and found that these important kelp forest areas are currently not adequately protected among regions. Only 20.9 % of the most highly persistent giant kelp forests in Central California, 8.4% in Southern California, and less than 1% in Northern California are fully protected in MPAs (Arafeh-Dalmau et al. 2021). Bull kelp is even less well protected – only 3.4% of the the most highly persistent bull kelp forests in Northern Central California, and 0.1% of those in Northern California are fully protected in MPAs (Arafeh-Dalmau et al. 2023). The authors of these studies recommend increasing protections for these important and highly persistent kelp forest areas.

In addition, the Ocean Protection Council recently funded the development of an ecologically-focused, spatially explicit prioritization tool to identify priority kelp restoration sites in

California waters (Giraldo-Ospina et al. 2023). Notably, this research used in-situ data as well as satellite imagery to determine the stability and current status of kelp forests across California's coastline, making the resulting prioritization index particularly robust. Of particular importance to this petition, the tool identifies kelp beds that have been historically stable, that persisted or bounced back quickly during the 2014-2016 marine heatwave, and that are currently doing well compared to other kelp forests – namely, the most stable and resilient kelp forest areas in state waters. Characterized as “medium priority” restoration sites – that is, historically stable kelp beds that are currently in good condition – these areas have a large potential for enhancing the natural regeneration and/or successful restoration actions of nearby kelp beds. The authors suggest potential actions: “Monitor these sites for triggers that may warrant intervention; Defend these sites from current or future threats; and Study these sites to understand the mechanisms of resistance to the marine heatwave.”

In light of these new studies, and in line with the site classifications put forth by Giraldo-Ospina et.al, we strongly recommend the state take action to protect as much of these newly-identified, stable, highly resilient kelp forest patches as possible with well-protected MPAs in the coming years. Protecting these iconic, dense kelp beds is one of California's best shots at preserving – and eventually restoring – our critically important kelp forest ecosystems quickly and cost-effectively.

Proposed areas for additional or enhanced MPA protections

Using spatially-explicit data detailing where highly persistent kelp beds and “medium priority” restoration sites overlap, as outlined by Arafah-Dalmau et al. 2021, 2023, and Giraldo-Ospina et al. 2023, we identified areas where additional protections are necessary to promote the continued persistence and stability of California's healthiest kelp forests (see Table 1).

Preference was given to areas already within or adjacent to existing California MPAs, recognizing the substantial scientific and stakeholder input involved in creating the original network through the MLPA process, and in order to adhere as much as possible to the original intent and science-based spacing guidelines provided by the SAT during the creation of the network. We recommend reducing spacing between MPAs in some places is necessary to increase the representation of these highly persistent and resilient kelp beds that have a greater chance of persisting into the future in our state MPA network. We also encourage the state to consider whether there are other areas of highly persistent and resilient kelp not included in this proposal that would be good candidates for new or expanded MPA protections.

To develop the proposal further, we collected information through interviews and other personal communications with scientists including Dr. Anita Giraldo-Ospina and Dr. Nur Arafah Dalmau, who graciously provided data, assisted with the interpretation of results to identify the recommended areas, and reviewed the proposal for accuracy. We also gathered expert input and data from individuals, local community groups, MPA Collaborative Network members, conservation organizations, and more. While their cooperation should not be taken as an endorsement, we greatly appreciate the information and guidance provided by these individuals which contributed to the overall accuracy and scientific validity of this proposal.

We did not focus on “high priority” restoration sites identified by Giraldo-Ospina et al. 2023, in order to avoid proposing MPA protections for areas that may require more intensive, direct restoration methods, such as grazer suppression activities, that are not currently permitted within MPA boundaries. However, we urge the state to consider what, if any, direct restoration activities might be compatible with different MPA designations within the state’s network (e.g. line 20 of the [MPA Collaborative Network’s Vetted Regulation Recommendations](#)), recognizing that the impacts of climate change may still degrade some kelp beds within MPAs in the future, and proactive restoration efforts may be warranted.

Since submitting our petitions in 2023, we have received feedback from community members and stakeholders, including members of the recreational and commercial fishing communities. Based on this feedback, we have revised the boundaries and regulations in several of the areas where we have proposed changes. These changes can be found in red in Table 1.

As noted in our original petitions, ~~Finally, it should be noted that,~~ while the general location and specific boundaries for proposed areas are listed in Table 1, we continue to be are happy to work with State and its partners to refine the proposed areas and boundaries in more detail, keeping in mind CDFW MPA design guidelines and the state’s interest in taking a holistic approach for reviewing petitions and enhancing the network to meet the statewide 30x30 goal.

Socioeconomic impacts

Enhanced, long-term protection of highly resilient kelp forest areas will bolster the diverse stakeholders, interests and industries that benefit from our coastal marine resources. Low-impact, non-consumptive recreational activities such as diving, snorkeling, and surfing will be unaffected – and even enhanced – by expanded MPAs, which will also provide enhanced research and education opportunities. Short-term impacts to recreational and commercial fishermen will be outweighed by larger benefits in the future, as has been demonstrated here in California and around the world (Bucaram et al. 2018, Lenihan et al. 2021, Medoff et al. 2022). For example, an analysis of CDFW fisheries data found that regional and statewide fishery landings and values do not appear to have been negatively impacted by MPAs (Murray and Hee 2019), and an analysis of California spiny lobster fishery found that any short-term losses were compensated for by a 225% increase in total catch after 6 years of MPA designation (Lenihan et al. 2021).

Relevance to MLPA Goals and DMR Recommendations

Enhancing the protection of kelp forests in California aligns strongly with Goals 1, 2, 3, and 4 of the California MLPA. By safeguarding California’s most resilient and stable kelp forests, as detailed in this petition, we will preserve critical habitat for a diverse range of marine species, from endangered sea otters to commercially valuable fish species. Kelp forests play a crucial role in the recovery and sustainability of marine life populations, as they serve as nurseries and refuges for many species, including those targeted by fisheries. These vibrant ecosystems also offer intrinsic value by supporting biodiversity and exceptional natural beauty, and their recreational and scientific use and enjoyment make them vital for the public ([MLPA Section 2856\(a\)\(2\)\(A\)](#)).

In addition, the regulation and boundary changes proposed by this petition specifically advance DMR Recommendation #4 - “Apply what is learned from the DMR to support proposed changes to the MPA Network and Management Program”. The DMR found that California MPAs helped to promote kelp forest resilience and recovery during and after the severe 2014-2016 marine heatwave. In the face of increasing climate impacts and as we struggle to recover from recent kelp forest declines across the state, expanding the MPA network in key, targeted areas can help to ensure the continued persistence of our remaining, most resilient kelp forests.

Relevance to Broader State Processes, Policies, and Goals

We applaud the actions that the State of California has already taken to respond to the severe declines in kelp forest cover across the state, including recent commercial kelp harvest closures in Northern California, annual harvest limits in Northern California, and the initiation of a statewide Kelp Restoration and Management Plan. We strongly support taking a whole-ocean approach to ensuring sustainable and effective management of kelp in our state waters ([Crowfoot et al. Objective 3.2](#)).

The MPA changes proposed in this petition complement the state’s ongoing kelp restoration and management work. They will also help to reduce the state’s costs associated with kelp restoration – harnessing the ability of well-protected, resilient kelp beds to promote the natural regeneration of nearby areas, allowing the state to direct more of its much-needed resources and funding for intensive restoration efforts in harder-hit areas with little kelp cover left.

Finally, this petition aligns strongly with the statewide goal set by both Governor Newsom and the legislature to conserve 30% of our coastal waters by 2030. If implemented in its entirety, the actions proposed in this petition will see an additional ~1.5% of state waters protected in highly to fully-protected areas, while helping the network to better achieve the goals set forth in the MLPA.

Bibliography

- Arafeh-Dalmau, Nur, et al. "Southward Decrease in the Protection of Persistent Giant Kelp Forests in the Northeast Pacific." *Communications Earth & Environment*, vol. 2, no. 1, 2021, pp. 1-7, <https://doi.org/10.1038/s43247-021-00177-9>.
- Arafeh-Dalmau, Nur, et al. "Integrating climate adaptation and transboundary management: Guidelines for designing climate-smart marine protected areas." *One Earth*, vol. 6, no. 11, 26 Oct. 2023, pp. 1523–1541, <https://doi.org/10.1016/j.oneear.2023.10.002>.
- Bell, Tom W., et al. "Kelpwatch: A New Visualization and Analysis Tool to Explore Kelp Canopy Dynamics Reveals Variable Response to and Recovery from Marine Heatwaves." *PLOS ONE*, vol. 18, no. 3, 2023, p. e0271477, <https://doi.org/10.1371/journal.pone.0271477>.

Bucaram, Santiago J., et al. "Assessing Fishing Effects inside and outside an MPA: The Impact of the Galapagos Marine Reserve on the Industrial Pelagic Tuna Fisheries during the First Decade of Operation." *Marine Policy*, vol. 87, 2018, pp. 212-225, <https://doi.org/10.1016/j.marpol.2017.10.002>.

California Department of Fish and Wildlife. California's Marine Protected Area Network Decadal Management Review. 2022

Carr, Mark H., et al. California Sea Grant, 2021, *Monitoring and Evaluation of Kelp Forest Ecosystems in the MLPA Marine Protected Area Network*, https://caseagrant.ucsd.edu/sites/default/files/Kelp%20Forest%20Technical%20Report%20Narrative_v2.pdf.

Crowfoot, Wade, et al. California Ocean Protection Council, *Strategic Plan to Protect California's Coast and Ocean 2020-2025*, https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20200226/OPC-2020-2025-Strategic-Plan-FINAL-20200228.pdf.

Eger, Aaron M., et al. "Global Kelp Forest Restoration: Past Lessons, Present Status, and Future Directions." *Biological Reviews*, vol. 97, no. 4, 2022, pp. 1449-1475, <https://doi.org/10.1111/brv.12850>.

Edgar, Graham J., et al. "Global Conservation Outcomes Depend on Marine Protected Areas with Five Key Features." *Nature*, vol. 506, no. 7487, 2014, pp. 216-220, <https://doi.org/10.1038/nature13022>.

Eisaguirre, Jacob H., et al. "Trophic Redundancy and Predator Size Class Structure Drive Differences in Kelp Forest Ecosystem Dynamics." *Ecology*, vol. 101, no. 5, 2020, p. e02993, <https://doi.org/10.1002/ecy.2993>.

Giraldo-Ospina., et al. "Where, when and how? A Guide to Kelp Restoration in California Using Spatio-temporal Models of Kelp Dynamics. A report to California Seagrant and California Ocean Protection Council. 2023. 72pp.

Heineke, Marcella R., et al. "Harnessing Trophic Cascades to Improve Foundation Species Restoration: A Meta-analysis." *Ecosphere*, vol. 14, no. 10, 2023, p. e4675, <https://doi.org/10.1002/ecs2.4675>.

Hopf, Jess K., et al. "No-take Marine Protected Areas Enhance the Benefits of Kelp-forest Restoration for Fish but Not Fisheries." *Ecology Letters*, vol. 25, no. 7, 2022, pp. 1665-1675, <https://doi.org/10.1111/ele.14023>.

House, Parker H., and Larry G. Allen. "Differences in trophic and community structure of kelp forest fishes inside and outside of three long-standing mpas in the Southern California bight." *Bulletin, Southern California Academy of Sciences*, vol. 121, no. 1, 23 June 2022, <https://doi.org/10.3160/0038-3872-121.1.1>.

- Jacquemont, Juliette, et al. "Ocean conservation boosts climate change mitigation and adaptation." *One Earth*, vol. 5, no. 10, 2022, pp. 1126–1138, <https://doi.org/10.1016/j.oneear.2022.09.002>.
- Kawamata, Shigeru, and Seiya Taino. "Trophic Cascade in a Marine Protected Area with Artificial Reefs: Spiny Lobster Predation Mitigates Urchin Barrens." *Ecological Applications*, vol. 31, no. 6, 2021, p. e02364, <https://doi.org/10.1002/eap.2364>.
- Lenihan, Hunter S., et al. "Evidence That Spillover from Marine Protected Areas Benefits the Spiny Lobster (*Panulirus Interruptus*) Fishery in Southern California." *Scientific Reports*, vol. 11, no. 1, 2021, pp. 1-9, <https://doi.org/10.1038/s41598-021-82371-5>.
- Marine Life Protection Act. January 1, 2001. Stat. 1999.
- Medoff, Sarah, et al. "Spillover Benefits from the World's Largest Fully Protected MPA." *Science*, 2022, <https://doi.org/abn0098>.
- Moxley, Jerry H., et al. "Non-Trophic Impacts from White Sharks Complicate Population Recovery for Sea Otters." *Ecology and Evolution*, vol. 9, no. 11, 2019, pp. 6378-6388, <https://doi.org/10.1002/ece3.5209>.
- Murray, Samantha, and Tyler T. Hee. "A Rising Tide: California's Ongoing Commitment to Monitoring, Managing and Enforcing Its Marine Protected Areas." *Ocean & Coastal Management*, vol. 182, 2019, p. 104920, <https://doi.org/10.1016/j.ocecoaman.2019.104920>.
- Nicholson, Teri E., et al. "Gaps in Kelp Cover May Threaten the Recovery of California Sea Otters." *Ecography*, vol. 41, no. 11, 2018, pp. 1751-1762, <https://doi.org/10.1111/ecog.03561>.
- Peleg, Ohad, et al. "Long-term Marine Protection Enhances Kelp Forest Ecosystem Stability." *Ecological Applications*, vol. 33, no. 7, 2023, p. e2895, <https://doi.org/10.1002/eap.2895>.
- Roberts, Callum M., et al. "Marine Reserves Can Mitigate and Promote Adaptation to Climate Change." *Proceedings of the National Academy of Sciences*, vol. 114, no. 24, 2017, pp. 6167-6175, <https://doi.org/10.1073/pnas.1701262114>.

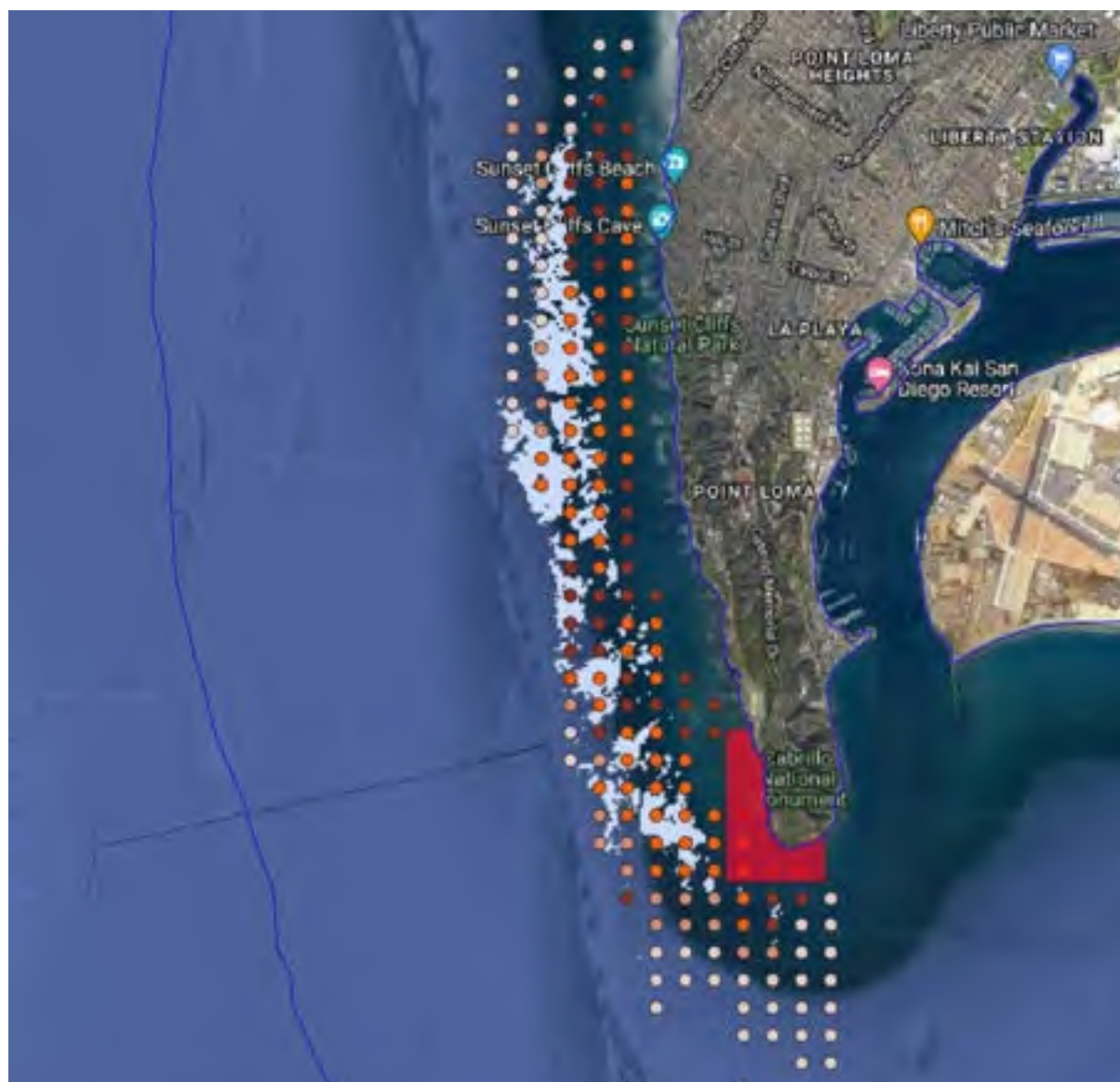
Appendix A

Distribution of Highly Persistent Kelp Beds Near State MPAs Proposed for Expansion

Highly persistent kelp beds identified by Arafteh-Dalmau et al. 2021 are depicted by light blue pixels. Priority kelp restoration sites characterized by Ospina-Giraldo et al. 2023 are shown using colored circles. “High priority” restoration sites are dark red, “medium priority” sites are bright orange, and “low” and “very low” priority sites are light and very light gray.

Existing California MPAs are denoted by red, purple, or blue polygons, and the 3 nm state waters limit is shown as a blue line.

Cabrillo SMR



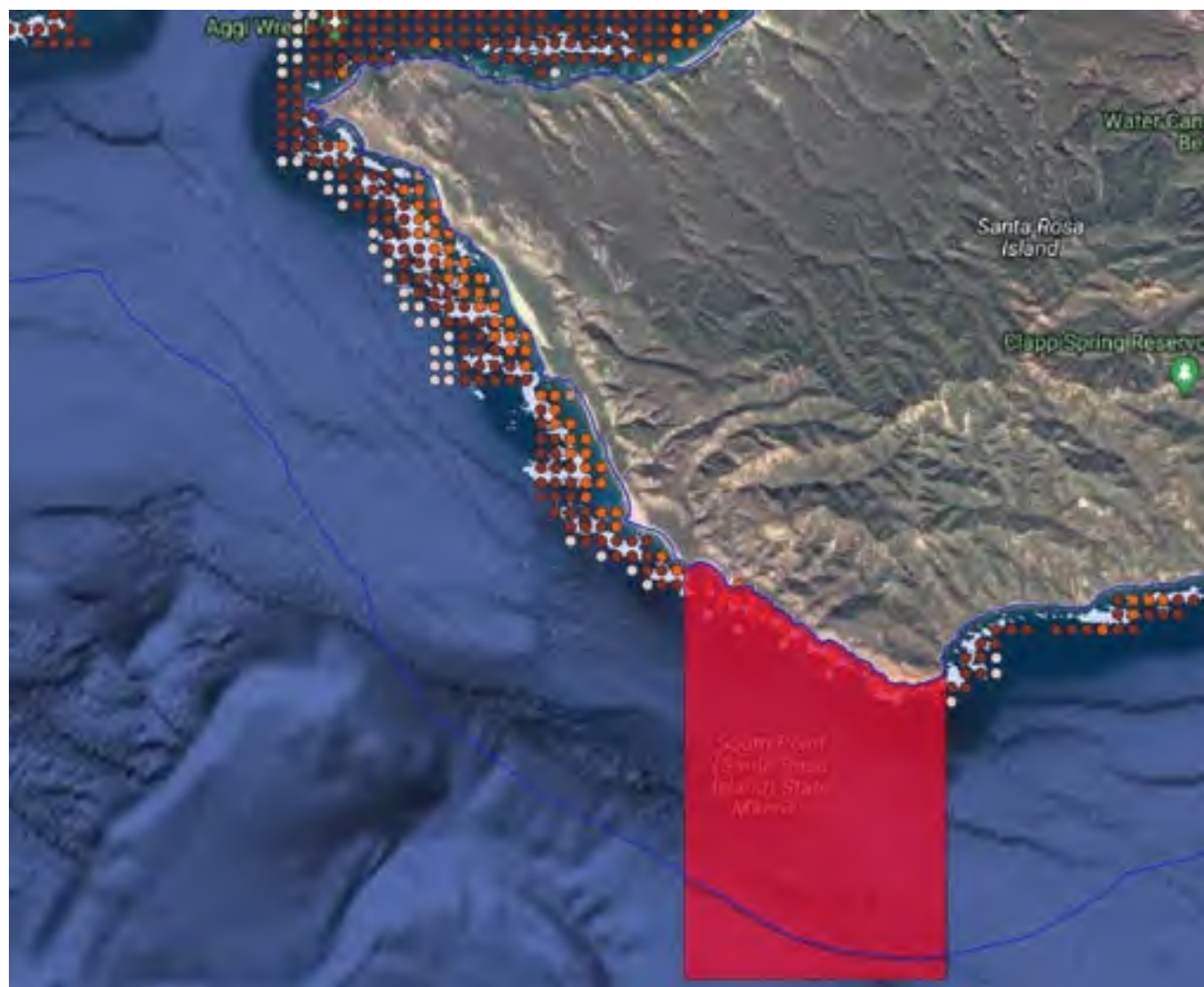
Point Dume SMCA



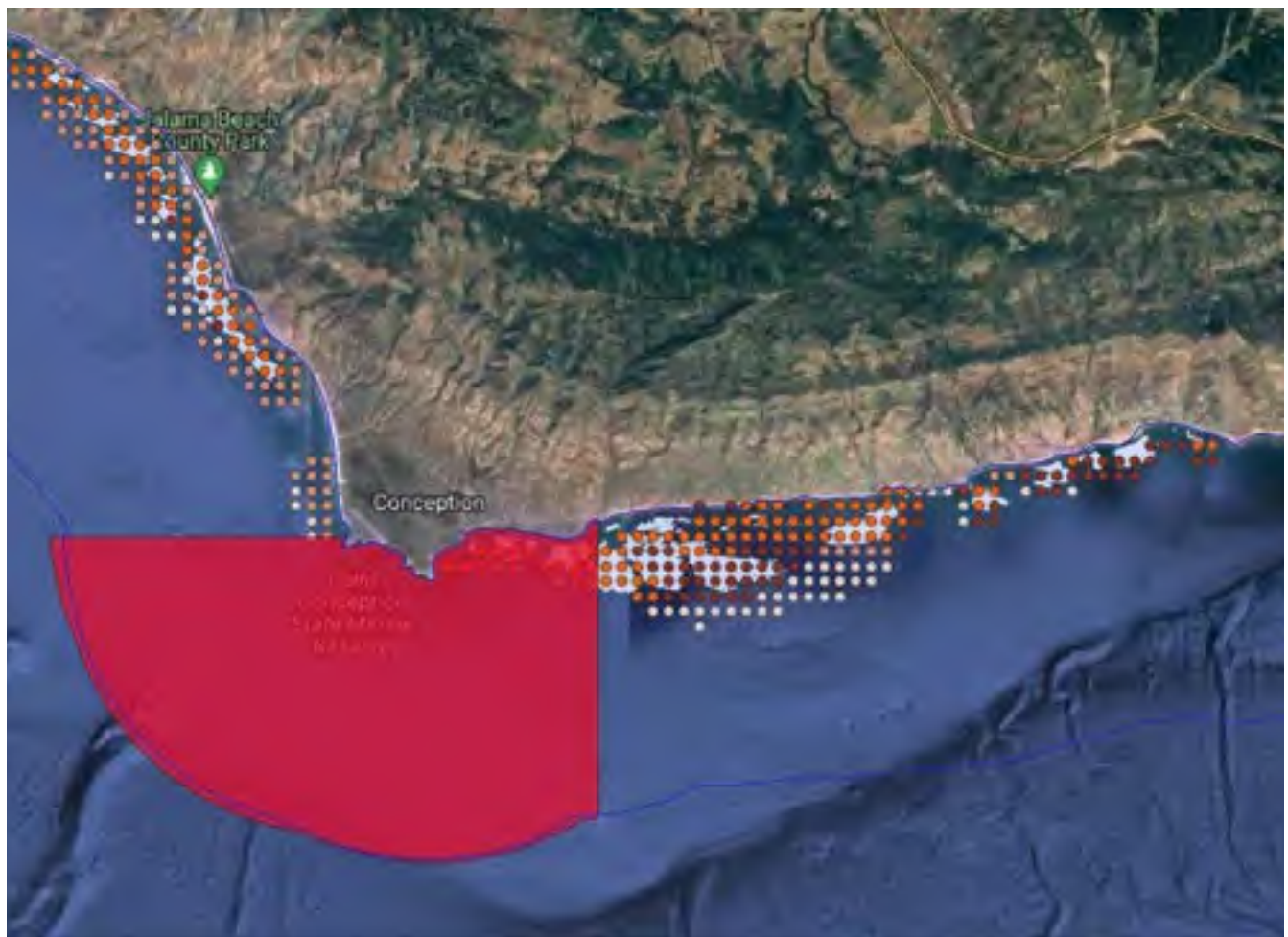
Gull Island SMR



South Point SMR



Point Conception SMR



Natural Bridges SMR



Pleasure Point, Santa Cruz



TABLE 1 - Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Name	Proposed action	Brief description	Proposed regulations and boundary change	Historical context	Notes
Cabrillo State Marine Reserve (SMR)	Expand by 15.2 sq miles	Large patches of dense, stable kelp forests exist along a large stretch of coast along Point Loma to the north of the very small existing SMR. Expansion is compatible with Cabrillo SMR's current goal to "protect diverse kelp forest, surfgrass, sandy seafloor, and intertidal and nearshore rocky reef habitat". Approximately 1,000,000 people visit the area annually which provides access to the ocean for thousands of school children and other groups. Recreational and subsistence fishing is common here.	No change in regulations. Maintain existing eastern and southern boundaries. Shift the western boundary to the edge of state waters per state MPA design and size guidelines, and shift the northern boundary to a visible geographic landmark at Swordfish Point to bring resilient kelp beds along the western shore of Point Loma within MPA protections. The new proposed boundaries would form straight lines, follow the mean high tide line, and follow the state waters boundary from the current southeast corner of the SMR to approximately the following coordinates: - Southwest corner: 32° 66.223' N lat. 117° 30.345' W long. - Northwest corner: 32° 72.539' N lat. 117°31.664' W long. - Northeast corner: 32° 72.529' N lat. 117°25.836' W long.	This area was initially included in a large proposed SMR ("Point Loma SMR", Proposal C) in recognition that this is an area of greater biological diversity than other areas. However, the state opted for a reserve far smaller than the science-based minimum size guidelines to avoid conflict with fishing grounds offshore.	To balance kelp forests protection with recreation and low-impact subsistence fishing, we are willing to consider the creation of a new SMCA alongside the existing SMR that allows for recreational hook-and-line fishing and spearfishing.
Point Dume State Marine Conservation Area (SMCA)	Expand by 4.6 sq mi	A large, dense, resilient kelp bed is located immediately west of the current SMCA's boundaries. We propose a small expansion of the SMCA to protect this important kelp bed. Currently, the SMCA protects nearly 16 square miles of sandy beach and seafloor habitat, rocky shores, kelp forests, surfgrass beds, an upwelling zone, and less than a quarter square mile of deep submarine canyon, which together create an area of high biodiversity. This SMCA also provides for excellent surfing, diving, tidepooling, and whale watching opportunities.	No change in regulations. Shift the western boundary to the edge of El Sol County Beach to bring the highly resilient patch of dense kelp forest just west of the current SMCA into MPA protection. The proposed new western boundary forms a straight line extending southward from the mean high tide line to the 3 nm state waters limit at approximately the following coordinates: - Northwest corner: 34°0413' N lat. 118°9063' W long. - Southwest corner: 33°9899' N lat. 118°9063' W long.	The kelp beds within the proposed expansion area were part of a historic SMP proposal ("Lechuza SMP", Proposal C) that sought to protect these persistent kelp beds along the Malibu Coast. This proposed SMP was not taken up by the state at the time, likely in favor of designating the Point Dume SMR/SMCA complex just to the east and to maintain spacing guidelines. In addition, the Point Dume SMR/SMCA boundaries were placed to the west of Point Dume in order to leave waters to the east of the point open/unprotected to accommodate for heavy commercial and recreational use - suggesting that the western side of the point was seen as less desirable for commercial and recreational interests.	
South Point SMR	Expand by 26.3 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. The stretch of coastline to the northwest of South Point SMR on Santa Rosa Island contains one of the largest contiguous resilient kelp beds on the islands. The SMR currently protects around 13 square miles of ocean habitat including rocky reefs, sandy seafloor, surfgrass beds, and small patches of highly resilient kelp forests. Expansion would help to bring the large stretch of resilient kelp bed to the northwest under MPA protection, and is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here". This area is remote and only accessible via boat. Backcountry beach camping along the South Point SMR shoreline is permitted from September 16 through December 3.	No change in regulations. Shift the western boundary of the SMR to the westernmost tip of Santa Rosa Island with protections extending south to the 3 nm state waters limit, bringing a large, contiguous patch of resilient kelp forest along the southwest coastline under MPA protections. The new western boundary should form a straight line extending south, connecting the island's westernmost tip and the 3 nm state waters limit at approximately the following coordinates: -Northwest corner: 34°0013' N lat. 120°2507' W long. -Southwest corner: 33°938' N lat. 120°2507' W long.	South Point SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	
Gull Island SMR	Expand by 1.8 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. A small area of unprotected coastline to the northwest of Gull Island SMR contains highly resilient kelp beds worth protecting. Expansion is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here".	No change in regulations. Shift the northern boundary of the SMR to the mean high tide line along the southwest coastline of Santa Cruz Island, to bring the highly resilient kelp beds at Posa Anchorage under MPA protection. The new northern boundary should follow the mean high tide line until it joins with an extension of the existing western boundary, at approximately 34°000' N lat.	Gull Island SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	
Point Conception SMR	Expand by 14.6 sq mi	A very large patch of resilient kelp forest exists just outside the current eastern boundary of Point Conception SMR. Ospina-Giraldo et al 2023 identified this patch as having a lower risk of future losses compared to nearby kelp patches, and being valuable for natural regeneration and long-term monitoring ("cluster 2" in Hypothetical Use Case #4). Data from an existing shore-based radar system that has been deployed at the site since 2020 shows the area immediately east of the currently MPA appears to be used largely for transit, rather than fishing. Access to this area is currently limited, allowing for additional protections to confer high conservation value while minimizing socioeconomic impacts.	No change in regulations. Maintain existing western and southern boundaries, and shift eastern boundary westward between Arroyo San Agustin and Canada de la Agujas beaches to bring the large resilient kelp bed to the east of Point Conception SMR within MPA protections. The new eastern boundary should form a straight line between the mean high tide line and the 3nm state waters boundary at approximately the following coordinates: -Northeast corner: 34°45' N lat. 120°3445' W long. -Southeast corner: 34°40' N lat. 120°3445' W long.	The proposed expansion area appears to have been initially included in a larger proposed SMR during the MLPA planning process (South Coast Proposal C) in recognition of this area's biological and oceanographic importance. The rationale for the smaller current boundaries for Point Conception SMR is unclear from the historical documents provided.	

Natural Bridges SMR	Expand by 13.7 sq mi	Multiple patches of resilient kelp forest exist just offshore from the current SMR boundaries. The original intent of this SMR was to protect the intertidal zone from tidepooling and shore fishing while leaving skiff fishing unimpacted. However, increasing climate impacts, the critical condition of the state's kelp forests, and strong public support for expanded protections, warrant a reevaluation and expansion of this SMR to protect these highly resilient kelp beds and newly vulnerable marine populations.	No change in regulations. Maintain existing western and eastern boundaries, and shift southern boundary out to the 3nm state waters limit to protect the resilient kelp beds and deeper habitats and pelagic waters per CDFW design and feasibility guidelines, as well as recently published peer-reviewed guidelines for climate-resilient MPA design (Arafeh-Dalmau et al. 2023).	The Natural Bridges SMR was designed as an intertidal SMR, specifically to avoid socio-economic impacts. The preferred option of siting a SMR that extends to greater depth range (as identified in the IDC proposal) was not pursued in an effort to reduce socio-economic impacts by avoiding siting SMRs adjacent to Santa Cruz harbor.	
Pleasure Point SMR	Designate ~3.2 sq mi	<p>A large, dense patch of resilient kelp forest exists just off Pleasure Point. The kelp beds of the northern Monterey Bay are some of the largest and most persistent in the state. This area in particular is a well-known and popular surfing location, with little commercial fishing taking place (pers. comms H. Nevins) and minimal recreational hook-and-line fishing and spearfishing occurring when surf conditions are flat. There are strong access points to the area, many educational and recreational opportunities, and a growing, colloquially named "shark park" nearby as the presence of juvenile white sharks increases. See letter from H. Nevins in Appendix B detailing the broader conservation value of the area.</p>	<p>We propose a no-take SMR to best protect this large kelp forest from all destructive and extractive activities. See Column F for an acceptable alternative, and additional consideration. Proposed regulations are as follows:</p> <p><i>"It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource."</i></p> <p>Proposed boundaries range from the northeastern edge of Trees Beach along the mean high tide line to the tip of Soquel Point. From the mean high tide line, the proposed boundary extends south (offshore) by 2.5 sq mi, in keeping with CDFW design guidelines and recent peer-reviewed guidelines for climate-resilient MPA design recommending a variety of habitats and depth ranges be represented within an MPA (Arafeh-Dalmau et al. 2023). While this area would not meet the state's minimum size guidelines, we recognize the importance of this area for recreational fishing and believe a strategically placed MPA of this size would protect as much of the kelp forest as possible while minimizing economic impact to the larger region, and providing conservation benefits to the broader region as detailed in Appendix A's letter from H. Nevins.</p>	n/a	To balance kelp forest protection with recreation and low-impact subsistence fishing, we are willing to consider a new Pleasure Point SMCA that allows for recreational hook-and-line fishing and spearfishing. In addition, to better protect the ecologically rich and biologically important waters of Soquel Cove nearby, we strongly suggest the state consider designating a larger State Marine Park (or State Marine Conservation Area allowing for all recreational activities) alongside, or in tandem with, the Pleasure Point detailed here for enhanced recreational and ecological benefits (see Appendix A letter from H. Nevins).

TABLE 2 - **Amendments to** Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Name	Proposed action	Brief description	Proposed regulations and boundary change	Historical context	Notes/Justification
Cabrillo State Marine Reserve (SMR)	Expand by 15.2 sq miles - 9.9 sq mi	Large patches of dense, stable kelp forests exist along a large stretch of coast along Point Loma to the north of the very small existing SMR. Expansion is compatible with Cabrillo SMR's current goal to "protect diverse kelp forest, surfgrass, sandy seafloor, and intertidal and nearshore rocky reef habitat". Approximately 1,000,000 people visit the area annually which provides access to the ocean for thousands of school children and other groups. Recreational and subsistence fishing is common here.	No change in regulations. Maintain existing eastern and southern boundaries. Shift the western boundary to the edge of state waters per state MPA design and size guidelines, and shift the northern boundary to a visible geographic landmark at New Hope Rock, such as the collection of buildings north of Building 609 Swordfish Point to bring resilient kelp beds along the western shore of Point Loma within MPA protections. The new proposed boundaries would form straight lines, follow the mean high tide line, and follow the state waters boundary from the current southeast corner of the SMR to approximately the following coordinates: - Southwest corner: 32° 66.223' N lat. 117° 30.345' W long. - Northwest corner: 32° 72.639' N lat. 117° 34.664' W long. 32° 42' 12.7188" N lat. 117° 18' 53.5788" W long. - Northeast corner: 32° 72.620' N lat. 117° 26.836' W long. 32° 42' 12.7188" N lat. 117° 15' 20.3976" W long.	This area was initially included in a large proposed SMR ("Point Loma SMR", Proposal C) in recognition that this is an area of greater biological diversity than other areas. However, the state opted for a reserve far smaller than the science-based minimum size guidelines to avoid conflict with fishing grounds offshore.	To balance kelp forests protection with recreation and low-impact subsistence fishing, we are willing to consider the creation of a new SMCA alongside the existing SMR that allows for recreational hook-and-line fishing and spearfishing. <u>Following conversations with local stakeholders, we are proposing a smaller reserve that will still protect areas of stable kelp forest while allowing for local commercial lobster fishing north of New Hope Rock</u>
Point Dume State Marine Conservation Area (SMCA)	Expand by 4.6 sq mi	A large, dense, resilient kelp bed is located immediately west of the current SMCA's boundaries. We propose a small expansion of the SMCA to protect this important kelp bed. Currently, the SMCA protects nearly 16 square miles of sandy beach and seafloor habitat, rocky shores, kelp forests, surfgrass beds, an upwelling zone, and less than a quarter square mile of deep submarine canyon, which together create an area of high biodiversity. This SMCA also provides for excellent surfing, diving, tidepooling, and whale watching opportunities.	No change in regulations. Propose allowing recreational take from shore by hook and line and spearfishing. Shift the western boundary to the edge of El Sol County Beach to bring the highly resilient patch of dense kelp forest just west of the current SMCA into MPA protection. The proposed new western boundary forms a straight line extending southward from the mean high tide line to the 3 nm state waters limit at approximately the following coordinates: - Northwest corner: 34°0413' N lat. 118°9063' W long. - Southwest corner: 33°9899' N lat. 118°9063' W long.	The kelp beds within the proposed expansion area were part of a historic SMP proposal ("Lechuza SMP", Proposal C) that sought to protect these persistent kelp beds along the Malibu Coast. This proposed SMP was not taken up by the state at the time, likely in favor of designating the Point Dume SMR/SMCA complex just to the east and to maintain spacing guidelines. In addition, the Point Dume SMR/SMCA boundaries were placed to the west of Point Dume in order to leave waters to the east of the point open/unprotected to accommodate for heavy commercial and recreational use - suggesting that the western side of the point was seen as less desirable for commercial and recreational interests.	- The Santa Ynez Band of Chumash Indians are exempt from this SMCA's take regulations - it is a culturally important area - Petition 2023-14MPA, submitted by the California Sea Urchin Commission, proposes to expand take even further by allowing for the commercial take of urchins within this SMCA. - Except for the petition above, FGC meetings and staff summary Nov/Dec notes show no complaints submitted by fishing interests in the Point Dume region <u>We recieved requests from recreational fishers that this change would increase access for subsistence fishing and we feel this approach balances recreation and kelp conservation.</u> <u>We would also be open to allowing recreational hook and line and spear fishing from non-motorized watercraft, should there be a legal pathway to creating that form of exemption</u>
South Point SMR	Expand by 26.3 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. The stretch of coastline to the northwest of South Point SMR on Santa Rosa Island contains one of the largest contiguous resilient kelp beds on the islands. The SMR currently protects around 13 square miles of ocean habitat including rocky reefs, sandy seafloor, surfgrass beds, and small patches of highly resilient kelp forests. Expansion would help to bring the large stretch of resilient kelp bed to the northwest under MPA protection, and is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here". This area is remote and only accessible via boat. Backcountry beach camping along the South Point SMR shoreline is permitted from September 16 through December 3.	No change in regulations. Shift the western boundary of the SMR to the westernmost tip of Santa Rosa Island with protections extending south to the 3 nm state waters limit, bringing a large, contiguous patch of resilient kelp forest along the southwest coastline under MPA protections. The new western boundary should form a straight line extending south, connecting the island's westernmost tip and the 3 nm state waters limit at approximately the following coordinates: -Northwest corner: 34°0013' N lat. 120°2507' W long. -Southwest corner: 33°938' N lat. 120°2507' W long.	South Point SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	Santa Rosa Island is a traditional home of the Chumash Located where warm water currents from the tropics and cold water currents from Alaska converge = ecologically rich and important area
Gull Island SMR	Expand by 1.8 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. A small area of unprotected coastline to the northwest of Gull Island SMR contains highly resilient kelp beds worth protecting. Expansion is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here".	No change in regulations. Shift the northern boundary of the SMR to the mean high tide line along the southwest coastline of Santa Cruz Island, to bring the highly resilient kelp beds at Posa Anchorage under MPA protection. The new northern boundary should follow the mean high tide line until it joins with an extension of the existing western boundary, at approximately 34°000' N lat.	Gull Island SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	

TABLE 2 - Amendments to Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Point Conception SMR	Expand by 14.6 sq mi	A very large patch of resilient kelp forest exists just outside the current eastern boundary of Point Conception SMR. Ospina-Giraldo et al 2023 identified this patch as having a lower risk of future losses compared to nearby kelp patches, and being valuable for natural regeneration and long-term monitoring ("cluster 2" in Hypothetical Use Case #4). Data from an existing shore-based radar system that has been deployed at the site since 2020 shows the area immediately east of the currently MPA appears to be used largely for transit, rather than fishing. Access to this area is currently limited, allowing for additional protections to confer high conservation value while minimizing socioeconomic impacts.	No change in regulations. Maintain existing western and southern boundaries, and shift eastern boundary westward between Arroyo San Agustin and Canada de la Agujas beaches to bring the large resilient kelp bed to the east of Point Conception SMR within MPA protections. The new eastern boundary should form a straight line between the mean high tide line and the 3nm state waters boundary at approximately the following coordinates: -Northeast corner: 34°45' N lat. 120°3445' W long. -Southeast corner: 34°40' N lat. 120°3445' W long.	The proposed expansion area appears to have been initially included in a larger proposed SMR during the MLPA planning process (South Coast Proposal C) in recognition of this area's biological and oceanographic importance. The rationale for the smaller current boundaries for Point Conception SMR is unclear from the historical documents provided.	Ecologically rich and important to Indigenous Chumash people The remoteness of its location makes it one of the least-visited mainland marine protected areas (MPAs) along California's south coast
Natural Bridges SMR	Expand by 13.7 sq mi <u>~14.5 sq mi</u>	Multiple patches of resilient kelp forest exist just offshore from the current SMR boundaries. The original intent of this SMR was to protect the intertidal zone from tidepooling and shore fishing while leaving skiff fishing unimpacted. However, increasing climate impacts, the critical condition of the state's kelp forests, and strong public support for expanded protections, warrant a reevaluation and expansion of this SMR to protect these highly resilient kelp beds and newly vulnerable marine populations.	No change in regulations. Maintain existing western and eastern boundary, <u>shift eastern boundary to encompass Natural Bridges State Beach</u> and shift southern boundary out to the 3nm state waters limit to protect the resilient kelp beds and deeper habitats and pelagic waters per CDFW design and feasibility guidelines, as well as recently published peer-reviewed guidelines for climate-resilient MPA design (Arafeh-Dalmau et al. 2023).	The Natural Bridges SMR was designed as an intertidal SMR, specifically to avoid socio-economic impacts. The preferred option of siting a SMR that extends to greater depth range (as identified in the IDC proposal) was not pursued in an effort to reduce socio-economic impacts by avoiding siting SMRs adjacent to Santa Cruz harbor.	Proximity of Santa Cruz Harbor to other ports, many fishermen travel within and beyond the region to conduct their fishing activities. <u>We would consider a southern boundary that is closer to shore, like near the continental shelf, if the state receives feedback to indicate such a change would better balance conservation with fishing interests.</u> <u>Santa Cruz MPA collaborative had identified this expansion as option that would clarify and reduce confusion around permitted uses at the state beach.</u>
Pleasure Point SMR- SMCA	Designate ~3.2 sq mi	A large, dense patch of resilient kelp forest exists just off Pleasure Point. The kelp beds of the northern Monterey Bay are some of the largest and most persistent in the state. This area in particular is a well-known and popular surfing location, with little commercial fishing taking place (pers. comms H. Nevins) and minimal recreational hook-and-line fishing and spearfishing occurring when surf conditions are flat. There are strong access points to the area, many educational and recreational opportunities, and a growing, colloquially named "shark park" nearby as the presence of juvenile white sharks increases. See letter from H. Nevins in Appendix B detailing the broader conservation value of the area.	We propose a <u>State Marine Conservation Area</u> no take SMR to protect this large kelp forest from all most destructive and extractive activities. Proposed regulations are as follows: <i>"It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource with the following exceptions: recreational take from shore by hook and line and spearfishing."</i> Proposed boundaries range from the northeastern edge of Trees Beach along the mean high tide line to the tip of Soquel Point. From the mean high tide line, the proposed boundary extends south (offshore) by 2.5 sq mi, in keeping with CDFW design guidelines and recent peer-reviewed guidelines for climate-resilient MPA design recommending a variety of habitats and depth ranges be represented within an MPA (Arafeh-Dalmau et al. 2023). While this area would not meet the state's minimum size guidelines, we recognize the importance of this area for recreational fishing and believe a strategically placed MPA of this size would protect as much of the kelp forest as possible while minimizing economic impact	We acknowledge the deliberate effort during the MLPA planning process to avoid siting MPAs near recreational access areas to allow for small vessels and kayaks to access fishing opportunities. However, in light of changing conditions, the extreme and significant losses of kelp cover over the past 10 years, and strong public support for additional protections, increased protections are warranted for this last remaining, resilient kelp area. Sufficient access remains for recreational use in immediate vicinity.	To balance kelp forest protection with recreation and low-impact subsistence fishing, we are <u>proposing a new</u> willing to consider a new Pleasure Point SMCA that allows for <u>shore-based</u> recreational hook-and-line fishing and spearfishing. In addition, to better protect the ecologically rich and biologically important waters of Soquel Cove nearby, we strongly suggest the state consider designating a larger State Marine Park (or State Marine Conservation Area allowing for all recreational activities) alongside, or in tandem with, the Pleasure Point detailed here for enhanced recreational and ecological

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

March 14th, 2025

Re: Amendments to Petition to Modify CA Marine Protected Area Network to Enhance
Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection
and Streamline Enforcement for Several California State MPAs

Dear President Zavaleta and Honorable Commissioners,

As scientists, researchers, and educators who work to understand our changing oceans and inspire the next generation of ocean stewards, we write to express our continued support for the expansion and strengthening of California's network of Marine Protected Areas (MPAs) to help safeguard the state's diverse marine ecosystems and ensure the long-term resilience of our ocean habitats.

Globally, the ocean is at a critical juncture, with escalating global temperatures, declining biodiversity, and a growing number of endangered marine species. California's coastal ecosystems have not been spared these global trends: Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ Only an average of 55 Pacific leatherback turtles are now found foraging off California's coast every year, a notable decrease from the yearly average of 128 Pacific leatherbacks observed in the region from 1990 to 2003.² Marine heatwaves have doubled over the last 30 years and have become more intense and longer in duration, putting stress on California's marine species and ecosystems.³

Through its adaptive management process California has a unique opportunity to take bold, effective and science-based action to conserve its marine biodiversity by expanding and strengthening its groundbreaking network of state MPAs. MPAs, like state parks on land, protect unique and important ocean habitats from destructive human activities that can damage the integrity of marine ecosystems. Globally and in California, strongly protected and well-enforced MPAs have been shown to be highly effective in conserving biodiversity, enhancing ecosystem

¹ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

² Benson, Scott R., Karin A. Forney, Jeffrey E. Moore, Erin L. LaCasella, James T. Harvey, and James V. Carretta. ["A Long-Term Decline in the Abundance of Endangered Leatherback Turtles, Dermochelys Coriacea, at a Foraging Ground in the California Current Ecosystem."](#) *Global Ecology and Conservation* 24 November 2020.

³IPCC (2021). Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte VP, Zhai A, Pirani SL, Connors C, Péan S, et al. (Eds.)].;

resilience, and mitigating the impacts of climate change on our oceans.⁴ Well-designed and well-implemented reserves better preserve natural interactions within ecosystems, allowing for greater resiliency in the face of rising global temperatures and changing environmental conditions.⁵

California's network of MPAs, established through the 1999 Marine Life Protection Act (MLPA), has now been in place for over a decade. The state's Decadal Management Review (DMR) analyzed a decade of monitoring data and showed that the MPA network has generally been effective at protecting ocean habitats and increasing fisheries-targeted species' biomass.⁶ Now, in the face of increasing threats, we need to build on this system and maintain California's role as a national and global leader in the effort to protect our ocean habitats.

That's why we, as scientists, researchers, and educators, urged you to expand and strengthen our state's network of MPAs via the adaptive management process of the DMR during the initial round of proposals submitted in November 2023.

Specifically, we supported the expansion of the MPA network to include additional protections for California's most resilient kelp forests. While these vital and iconic ecosystems have faced declines statewide in recent years, kelp forests in some areas have persisted or bounced back quickly in the face of marine heatwaves and other disturbances.⁷ By expanding protections for these resilient forests under the MLPA, the state can minimize direct human impacts in these relatively healthy areas, helping to ensure their continued persistence and enhancing the effectiveness of restoration efforts for declining kelp ecosystems nearby. Globally, kelp restoration has been most successful in places adjacent to/contiguous with healthy kelp forest ecosystems.⁸

Enhancing the protection of California's kelp forests strongly aligns with Goals 1, 2, 3, and 4 of the MLPA by preserving natural diversity, sustaining marine life populations, protecting marine habitats for their intrinsic value, and improving recreational and educational opportunities while minimizing human disturbance. Safeguarding resilient kelp ecosystems will ensure critical habitat preservation for diverse marine species, including endangered sea otters and commercially valuable fish.

⁴ James Horrox, Kelsey Lamp and Steve Blackledge. [New Life for the Ocean: How Marine Protections Keep Our Waters Wild](#). Environment America Research & Policy Center & Frontier Group, February 3, 2021

⁵ Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](#). *Science* **373**, eabf0861(2021). DOI:10.1126/science.abf0861

⁶ California Department of Fish and Wildlife. (2022). California's Marine Protected Area Network Decadal Management Review.;

⁷ Arafeh-Dalmau *et al.*, [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), *One Earth* 6, 1–19 November 17, 2023 ^a 2023 Published by Elsevier Inc.

⁸ Eger, A.M., Marzinelli, E.M., Christie, H., Fagerli, C.W., Fujita, D., Gonzalez, A.P., Hong, S.W., Kim, J.H., Lee, L.C., McHugh, T.A., Nishihara, G.N., Tatsumi, M., Steinberg, P.D. and Vergés, A. (2022), Global kelp forest restoration: past lessons, present status, and future directions. *Biol Rev*, 97: 1449-1475.

It is also vital that existing California MPAs are able to achieve their stated goals of conserving biodiversity and ecosystem health. During the initial proposals, we encouraged the state to consider increasing protections for MPAs that are currently only lightly or minimally protected, especially in places where weaker or more complicated regulations lead to poor compliance and enforcement. Research has shown that highly and fully protected areas, where few if any destructive or extractive activities are allowed, provide greater ecological benefits than lightly or minimally protected areas.⁹ This global research has been borne out in California's coastal MPAs: Recent research that evaluated the conservation performance of 59 of California's MPAs shows that the network provides positive results that span across multiple ecosystems, with a significant increase in the fish biomass of species targeted by fishing inside fully protected zones.¹⁰ Ten years after establishing fully protected areas in the Channel Islands National Marine Sanctuary, fish targeted by fishing became 50% more abundant and their total biomass increased by 80%.¹¹ These benefits can extend beyond MPA boundaries through positive spillover effects, increasing fish populations in surrounding waters. Another study found that MPAs provide benefits to California spiny lobster fisheries through spillover effects. Over six years, lobster populations grew significantly faster inside MPAs, and commercial catch increased by 225% in the fishing block containing these MPAs.¹²

The state's network currently protects 12% of state waters in highly- or fully-protected MPAs, as defined by Grorud-Colvert et al. (2021), which leaves 4% of the network lacking the most effective conservation protections.¹³ By expanding the level of protection to areas already identified as ecologically important, we can ensure that the area's vulnerable marine resources have the chance to recover and flourish, aligning with the goals of the MLPA and the state's commitment to protect more of its coastal waters.

Our ocean is not just a source of clean air, wildlife, and natural beauty but also a mystery that beckons exploration and discovery. It is our moral imperative to lead the nation and the world in taking bold actions to preserve the sea by following the guide of science, ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

President Zavaleta and Honorable Commissioners, you have a chance to take up this imperative and champion the expansion and strengthening of California's network of Marine Protected Areas. By doing so, you will leave a lasting legacy of marine stewardship that will keep California at the forefront of ocean conservation, nationally and globally.

⁹ Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](#). *Science* **373**, eabf0861(2021). DOI:10.1126/science.abf0861

¹⁰ Smith et al., "Conservation benefits of a large marine protected area network that spans multiple ecosystems", *Society for Conservation Biology*, doi: doi.org/10.1111/cobi.14435, January 2025

¹¹ Scott L. Hamilton et al., "Incorporating Biogeography into Evaluations of the Channel Islands Marine Reserve Network," *Proceedings of the National Academy of Sciences USA*, 107(43): 18272-18277, doi: 10.1073/pnas.0908091107, October 2010

¹² Lenihan et al., "Evidence that spillover from Marine Protected Areas benefits the spiny lobster (*Panulirus interruptus*) fishery in southern California", *Scientific Reports*, January 2021. Retrieved from <https://www.nature.com/articles/s41598-021-82371-5>

¹³ *Ibid.*

Thank you for your unwavering commitment to the welfare of our ocean and for considering this urgent matter. Together, we can ensure a healthier, more abundant future for the unique marine ecosystems that define California.

Sincerely,

Dr. De'Marcus Robinson
NOAA CCME Postdoc, Florida A&M University

Dr. Elijah Catalan
PhD Candidate, Institute of the Environment and Sustainability at UCLA

Dr. Tina Treude
Professor for Marine Geomicrobiology, UCLA

Dr. Justin Dunnivant
Assistant Professor of Archaeology, UCLA
Trustee of the National Marine Sanctuary Foundation

Dr. Brian Kennedy
Chief Scientist, Ocean Discovery League

Dr. Win Cowger
Research Director, Moore Institute for Plastic Pollution Research

Dr. Francis Chan
Associate Professor, Oregon State University

Dr. Kira Homol
Dr. of Oceanography, ULCA

Dr. Gabriela Carr,
Graduate student researcher, Institute of the Environment and Sustainability at University of California Los Angeles

Dr. Laura Edwards
Marine Operations Program Manager, University of California Los Angeles

Dr. Michael Akresh
Faculty, Antioch University

Dr. Alice Alldredge
Professor Emeritus, University of California, Santa Barbara

Dr. Steven Allison
Professor, University of California, Irvine

Dr. Peter Auster
Research Professor Emeritus, University of Connecticut

Dr. Nevé Baker
PhD Candidate, University of California Santa Cruz

Dr. Leocadio Blanco Bercial
Assistant Professor, Bermuda Institute of Ocean Sciences at Arizona State University

Dr. Bailey Drechsler
Professor, Cuesta College

Dr. Michelle María Early Capistrán
Postdoctoral Scholar, Stanford University

Dr. Rikki Eriksen
Director Marine Spatial Ecology, California Marine Sanctuary Foundation

Dr. Paul Faulstich
Emeritus Professor of Environmental Analysis, Pitzer College

Dr. Sarah Hameed
Blue Parks Director & Senior Scientist, Marine Conservation Institute

Dr. Brett Holland
Faculty, California State University, Sacramento

Dr. Flora Lu
Professor of Environmental Studies, University of California, Santa Cruz

Dr. Kathy Ann Miller
Curator of Algae, Herbarium, University of California

Dr. Dawn Murray
Professor, Antioch University

Jacquelin Mutter
National One Water Planning Lead, HDR

Dr. Erin Naegle
STEM Dean of Instruction, Cuesta College

Dr. Hannahrose Nevins
Seabird Ecologist, Seabird Consultant

Dr. Gretchen North
Professor of Biology, Occidental College

Dr. Carolina Olguin Jacobson
Postdoctoral fellow, Hopkins Marine Station of Stanford University

Dr. Gorka Sancho
Professor, College of Charleston

Joanna Tang
PhD Candidate, University of California Santa Barbara

Dr. Robert Voeks
Professor, Department of Geography & the Environment at California State University, Fullerton

Dr. Charles Zender
Professor of Earth System Science, University of California, Irvine

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

March 14th, 2025

Dear Governor Newsom and Honorable Commissioners of the California Fish and Game Commission:

As marine and environmental scientists, academics and researchers, we are writing to emphasize the critical state of California's marine ecosystems and the importance of ocean conservation. We strongly support expanding Marine Protected Areas (MPAs) to protect our ocean. Following the submission of 20 petitions in the adaptive management process, we support proposals that expand MPAs to better protect kelp forests and strengthen enforcement against illegal fishing, while opposing proposals that would reduce protections for the network.

California's ocean faces unprecedented threats from rising ocean temperatures, biodiversity loss, and other climate stressors. We have lost more than 90% of its kelp forests since 2014, impacting threatened species such as the southern sea otters as they lose their habitat.¹⁴ Marine heatwaves have doubled over the last 30 years, becoming more intense and longer in duration, putting stress on California's marine species and ecosystems.¹⁵

More than one-fifth of the world's coral reefs have been effectively destroyed, and many of those that remain face imminent collapse¹⁶. Average acidity levels have risen by approximately 30 % since the industrial era started, as the oceans have absorbed carbon dioxide emitted to the atmosphere, and are projected to affect our waterways and food sources that we rely on¹⁷. This change in ocean chemistry may make the ocean uninhabitable for certain marine species and bring serious consequences for ocean ecosystems and food webs. About 90 percent of global fish stocks are classified as fully exploited, overexploited or depleted¹⁸. About a tenth are hovering on the edge of collapse. The effects of this loss reverberate throughout marine ecosystems; declines in biodiversity exponentially weaken an ecosystem's ability to recover from disturbances, worsen water quality and lead to widespread resource collapse.

In the face of this urgent crisis, California has the opportunity to take bold, effective action. Our ocean holds some of the most biodiverse ecosystems in the world, and our state has been a global leader in ocean conservation.¹⁹ At this critical juncture, the marine conservation path that

¹⁴ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

¹⁵ García-Reyes, Marisol, Andrew Leising, Rebecca Asch, Steven Bograd, and Tessa M Hill. Rep. Indicators of Climate Change in California, "[Coastal Ocean Temperature](#)", *California Office of Environmental Health Hazard Assessment*, 2022.

¹⁶ Daniel Dickinson, "[Bringing the coral reefs back to life](#)", UN News, United Nations, June 2020

¹⁷ NOAA, "[Ocean Acidification](#)", Resources, February 2025

¹⁸ Mukhisa Kituyi and Peter Thomson, "[90% of fish stocks are used up – fisheries subsidies must stop emptying the ocean](#)," World Economic Forum, July 13, 2018.

¹⁹ CA Department of Fish and Wildlife "About California's Marine Protected Areas", 2025

California chooses has the opportunity to set the course for the nation and the world. Over two decades ago, the state passed the groundbreaking Marine Life Protection Act (MLPA), which called on the state to create a network of MPAs to enhance sustainable ocean ecosystems²⁰ As threats to California's coastal ecosystems continue, it is critical that MPAs are strengthened and expanded to protect more of our kelp forests. Protecting specific habitat areas, including the remaining areas of stable kelp forests, is a crucial step in safeguarding our diverse marine species and ensuring the long-term well-being of our ocean environments. Kelp forests provide habitat for marine species, create natural barriers to climate change stressors, serve as carbon sinks and support local businesses that depend on California's ocean.²¹ By expanding protections for resilient forests under the MLPA, the state can minimize direct human impacts in these relatively healthy areas helping to ensure their continued persistence and enhancing the effectiveness of restoration efforts for declining kelp ecosystems nearby.²²

No-take MPAs (i.e., "fully" protected MPAs) are especially impactful in conserving and restoring marine ecosystems. Expanding MPAs is critical to close coverage gaps within the network and strengthen protective effectiveness. Recent research that evaluated the conservation performance of 59 of California's MPAs shows that the network provides positive results that span across multiple ecosystems, with a significant increase in the fish biomass of species targeted by fishing inside fully protected zones²³. Ten years after establishing fully protected areas in the Channel Islands National Marine Sanctuary, fish targeted by fishing became 50% more abundant and their total biomass increased by 80%²⁴. These benefits can extend beyond MPAs through positive spillover effects, increasing fish populations in surrounding waters²⁵. Another study found that MPAs provide benefits to California spiny lobster fisheries through spillover effects. Over six years, lobster populations grew significantly faster inside MPAs, and commercial catch increased by 225% in the fishing block containing these MPAs²⁶. All of these metrics tell a story about the effectiveness of MPAs as a tool to improve the health of the marine ecosystem; ocean spaces with more species, and more diverse individuals, have a better chance of survival as climate change intensifies.

Further, no-take marine reserves can improve ecosystem resilience, as the ocean is faced with myriad stressors. By providing areas that serve as buffers against climate change, fully protected MPAs adapt to changing environmental conditions because they better preserve natural

²⁰California Marine Protected Areas "[California State MPAs](#)".

²¹ Corryn Wetzel, "[Kelp forests capture nearly 5 million tonnes of CO2 annually](#)", New Scientist, April 2023

²² CA Department of Fish and Wildlife "[About California's Marine Protected Areas](#)", 2025

²³ Smith et al., "Conservation benefits of a large marine protected area network that spans multiple ecosystems", Society for Conservation Biology, doi: doi.org/10.1111/cobi.14435, January 2025

²⁴ Scott L. Hamilton et al., "Incorporating Biogeography into Evaluations of the Channel Islands Marine Reserve Network," Proceedings of the National Academy of Sciences USA, 107(43): 18272-18277, doi: 10.1073/pnas.0908091107, October 2010

²⁵ Boris Worm et al., "Impacts of Biodiversity Loss on Ocean Ecosystem Services," Science, 314, 787-790, doi: 10.1126/science.1132294, November 2006, 789, archived at

<https://web.archive.org/web/20200707013658/https://www3.epa.gov/region1/npdes/schillerstation/pdfs/AR-024.pdf>

²⁶ Lenihan et al., "Evidence that spillover from Marine Protected Areas benefits the spiny lobster (*Panulirus interruptus*) fishery in southern California", Scientific Reports, January 2021. Retrieved from <https://www.nature.com/articles/s41598-021-82371-5>

interactions within ecosystems, allowing for greater resiliency.²⁷ On the other hand, lightly protected areas do not have the same benefits for biodiversity as fully protected marine reserves and highly protected areas that achieve similar conservation outcomes. As California moves forward to protect more ocean space, areas that count as “conserved” should align with a clear scientific standard that effectively protects biodiversity.

We oppose proposals that promote unsustainable fishing practices that place pressure on California’s marine ecosystems, creating cascading effects on the whole marine species that depend on them. These practices threaten to disrupt vital ecological relationships and damage the long-term health of our coastal waters.

To ensure an effective implementation of MPAs, we support proposals that strengthen comprehensive enforcement mechanisms to minimize poor compliance and prevent illegal fishing. Research has shown that greatest ecological benefits can be achieved in areas with few extractive activities²⁸. However, without effective monitoring and well-defined rules, activities may continue in MPAs that threaten the marine ecosystems they were designed to protect. Therefore, we advocate for expanding MPAs while ensuring robust enforcement measures.

Enhancing the protection of California's kelp forests strongly aligns with Goals 1, 2, 3, and 4 of the MLPA by preserving natural diversity, sustaining marine life populations, protecting marine habitats for their intrinsic value, and improving recreational and educational opportunities while minimizing human disturbance.²⁹ Safeguarding resilient kelp ecosystems will ensure critical habitat preservation for diverse marine species, including endangered sea otters and commercially valuable fish.

In order to keep track of progress and allow California’s efforts to set the standard nationally and globally, the state should use scientific criteria to distinguish between different levels of protection and classify existing protected areas. A scientific framework should be applied to evaluate proposals for areas that need to be conserved or areas where protections should be strengthened for existing MPAs.

Our ocean is a source of clean air, wildlife, and natural beauty, but also a mystery that beckons preservation and exploration. We cannot afford to lose more of our vital kelp forests. California has the opportunity to lead the nation and the world in taking bold action to preserve the sea,

²⁷ Jankowska, Emilia, et al. "[Climate Benefits from Establishing Marine Protected Areas Targeted at Blue Carbon Solutions](#)." *Proceedings of the National Academy of Sciences*, vol. 119, no. 23, 2022.

²⁸ Ibid Kirsten Grorud-Colvert et al., The MPA Guide: A framework to achieve global goals for the ocean. *Science* 373 ,eabf0861(2021). DOI:10.1126/science.abf0861

²⁹ “Marine Life Protection Act.” CDFW. <https://wildlife.ca.gov/Conservation/Marine/MPAs/MLPA>.

ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

Sincerely,

Dr. Timothy Lyons
Distinguished Professor of Biogeochemistry, University of California Riverside

Dr. Michael Parsons
Researcher, University of California Irvine

Dr. Polly Campbell
Associate Professor, University of California Riverside

Dr. Benjamin Blonder
Associate Professor, the Department of Environmental Science, Policy, and Management at UC Berkeley

Dr. Ellen Druffel
Distinguished Professor, University of California Irvine

Dr. Janine Barjath-Rodino
Director of Meteorology & Professor of Atmospheric & Oceanic Sciences, UCLA

Dr. Annie Rosen
Graduate Student, UCLA

Dr. Nattamon Maneenoi
PhD Student, UCLA

Dr. Karen Holl
Professor, University of California, Santa Cruz

Dr. Madeleine Fairbairn
Associate Professor, University of California, Santa Cruz

Dr. Martin Connors

Visiting Researcher, UCLA

Dr. Eva Zlimen

Graduate Student UCLA Earth Planetary & Space Sciences

Dr. James McWilliams

Professor, UCLA

Dr. Edward Schwieterman

Assistant Professor UC Riverside

Dr. Flora Lu

Professor of Environmental Studies, UC Santa Cruz

Dr. Iris Holzner

Assistant Teaching Professor, Environmental Studies Program at University of California Santa Barbara

Dr. Elizabeth Ackert

Associate Professor, University of California Santa Barbara

Dr. Guillermo Terrén Serrano

Climate Innovation Fellow, California NanoSystems Institute at University of California Santa Barbara

California Fish and Game Commission
715 P Street, 16th floor,
Sacramento, CA 95814

March 14th, 2025

RE: CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Dear President Zavaleta and Honorable Commissioners:

As marine and environmental businesses and recreationists, we know first hand the value California's nature holds for residents and visitors alike. California's ocean holds some of the most biodiverse ecosystems in the world and the state has been a global leader in ocean conservation to keep it that way. Now, we are writing to you to urge the Fish and Game Commission (FGC) to prioritize strengthening the state's existing network of Marine Protected Areas (MPAs) so that California can continue to safeguard its treasured ocean life and set an example for the nation and the globe of responsible environmental stewardship.

California's coastline serves as a captivating haven for individuals seeking to revel in its myriad wonders. Our coast offers many recreational activities, such as surfing, swimming, kayaking, scuba diving, whale watching, and an array of other pursuits. That is why, as business owners and community members who rely on a vibrant ocean, we are worried about the ongoing biodiversity crisis in our ocean. Over the last half-century, marine vertebrate populations have declined by nearly 50 percent, and the number of endangered marine species is growing globally.³⁰ Marine heatwaves have doubled over the last 30 years, and have become more intense and longer in duration, putting stress on California's marine species and ecosystems.³¹

Climate change, combined with coastal pollution and marine debris, harms wildlife through entanglement, ingestion and habitat disruption.³² Unsustainable fisheries remain the number one driver of biodiversity loss in the ocean.³³ Yet overfishing continues. About 90 % of global fish stocks are classified as fully exploited, overexploited or depleted.³⁴ On the U.S. West Coast, six commercially caught fish stocks, including three species of salmon, remain on the overfished and

³⁰ Doebeli, Anna G., et al. "How Does the Environmental State "See" Endangered Marine Animals?" *Environmental Science & Policy*, vol. 124, 2021, pp. 293-304, <https://doi.org/10.1016/j.envsci.2021.07.001>. Accessed 31 Jan. 2024.

³¹ García-Reyes, Marisol, Andrew Leising, Rebecca Asch, Steven Bograd, and Tessa M Hill. Rep. Indicators of Climate Change in California, "[Coastal Ocean Temperature](#)", *California Office of Environmental Health Hazard Assessment*, 2022.

³² California Coastal Commission, "[The Problem with Marine Debris](#)," April, 2023

³³ Eduardo Brondizio et al., "[Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#)," Zenodo, May 4, 2019.

³⁴ Mukhisa Kituyi and Peter Thomson, "[90% of fish stocks are used up – fisheries subsidies must stop emptying the ocean](#)," World Economic Forum, July 13, 2018.

overfishing list.³⁵ Overfishing can result in cascading effects throughout the marine ecosystems; declines in biodiversity's ability to recover from disturbances, widespread ecosystem/habitat collapse and undermining the ocean's ability to perform its role as a carbon sink.³⁶ As a business that relies on the ocean's ecosystem for sustenance and profits, these statistics are extremely worrisome.

In the face of this urgent crisis, the California government has the opportunity to take robust and effective action. As the adaptive management process following the submission of 20 petitions has opened up, we support proposals that expand MPAs to better protect kelp forests and strengthen enforcement against overfishing. Research has shown that greatest ecological benefits can be achieved in areas with few extractive activities³⁷.

No-take marine reserves (i.e., "fully" protected MPAs) are one of the most effective ways to conserve biodiversity and ecosystem function and improve ecosystem resilience, as the ocean is faced with myriad stressors. Marine reserves provide areas that serve as buffers against the impacts of climate change and are able to adapt to acidifying waters, rising sea levels, intensified storm events, and decreases in oxygen availability. Ten years after establishing fully protected areas in the Channel Islands National Marine Sanctuary, fish targeted by fishing became 50% more abundant and their total biomass increased by 80%³⁸.

We oppose proposals to weaken the MPA network as that could place more pressure on California's marine ecosystems. We've lost over 90% of our kelp forests off the coasts of Northern California since 2014³⁹, creating detrimental effects on the whole marine species that depend on them. We cannot afford to lose more of these vital kelp forests.

Stronger MPA coverage and healthier marine ecosystems are critical for local marine businesses like us who depend on California's vibrant ocean. California's ocean economy provides 1,035 million jobs for California residents, over \$143 billion in output, and \$84 billion in gross state product (GSP), contributing to about 7% of the state's workforce.⁴⁰ However, if we continue to not take any action to preserve the ocean, then this will decrease over time. Not only will hundreds of thousands of people be out of a job, but we will not receive the intrinsic benefits we receive from having access to our beautiful California coasts. We are asking the government to take real action to prevent this great loss, as we rely on the ocean for so much more than just our livelihoods.

³⁵ NOAA Fisheries, "[Status of Stocks 2023](#)," Sustainable Fisheries, February 10, 2025.

³⁶ UNFCCC, "[How overfishing harms the climate](#)," Plenty of Fish? June 10, 2022.

³⁷ Ibid Kirsten Grorud-Colvert et al., The MPA Guide: A framework to achieve global goals for the ocean. Science 373, eabf0861(2021). DOI:10.1126/science.abf0861

³⁸ Scott L. Hamilton et al., "Incorporating Biogeography into Evaluations of the Channel Islands Marine Reserve Network," Proceedings of the National Academy of Sciences USA, 107(43): 18272-18277, doi: 10.1073/pnas.0908091107, October 2010

³⁹ U.S. National Science Foundation, "[Collapse of Northern California kelp forests will be hard to reverse](#)," NSF Stories, March 17, 2021.

⁴⁰ Los Angeles County Economic Development Corporation, "[Ocean Economy](#)," LAEDC, 2020.

A broad set of Californians love the ocean, and our community should be included in making decisions that impact our state's coastal waters. It's important that the diversity of California's ocean users is reflected in this political process. This includes youth, recreational users, conservation groups, businesses, ocean lovers and more.

The ocean is a source of clean air to breathe, wildlife to marvel at, beauty and mystery. It is imperative that California continue to lead the nation and world in taking bold action for the sake of the sea and its future.

Sincerely,

Central Coast Outdoors

Dive Outdoors

Enjoy Napa Valley

Kayak Connection

La Jolla Sea Caves Kayak, LLC

Otter Bay Wetsuits

SpitSea Dive

Malibu Divers

Channel Islands Expeditions

Ocean Safaris

SunSwept Sailing

Bamboo Reef Dive Centers

Eco Dive Center

Blue Holic Scuba

Hobie Surf Shop/Fragile Ocean

Girl in the Curl LLC

California Dive Guy

CALPIRG Students



Governor Newsom signed Executive Order N-82-20 in which he supported the creation of more Marine Protected Areas (MPAs). These help give safe havens for the animals in the area, animals like the California Sea Lion, our iconic Elephant Seals, and the adorable Harbor Seals which all use the Channel Islands National Marine Sanctuary along with others along the coast, the Southern Sea Otters which rely on the kelp forests in our MPAs, the humongous Mola Mola which live in and around the Point Lobos SMR, our protected Abalone which live in MPAs like Sea Lion Cove SMCA and the Edward F. Ricketts SMCA, and so many more.

These amazing animals are why we are advocating for expanding California's network of MPAs, in particular to protect key kelp forests along the coast.

In the past month, CALPIRG volunteers engaged over 12,000 UC students in one-on-one conversations, and educated over 18,000 overall about expanding Marine Protected Areas in California. We have experienced overwhelming support!



CALPIRG Students

Dear California State Leaders,

While approximately 16% of California's coastal waters are conserved, only 12% have the level of protection scientists say is needed to defend against biodiversity loss and climate impacts. California's unique network of 124 Marine Protected Areas (MPAs) makes the state a global leader in protecting the critical habitats and life existing in and around our oceans. However, with a warming planet, and historic species extinctions, it is clear that California must strengthen and expand our existing network of protections with highly and fully protected MPAs. Highly protected areas only allow light extractive activities, while fully protected areas do not allow any extractive or environmentally destructive activities. I am asking you to call for the adoption of more highly and fully protected marine areas, which must be the standard for protecting 30% of our ocean by 2030.

Signed,
6,000 UC Students



Visit <https://tinyurl.com/calpirgoceans>
or scan the QR Code to view student support

CALPIRG activists also educated middle school students in the Los Angeles area about the benefits of MPAs for endangered species. Over 200 students and their teachers participated in a lesson about the endangered Southern Sea Otter and the importance of habitat protection through Marine Protected Areas!



CALPIRG

Students

UC Davis Students

UCD Kate Stoneham
UCD Manua Maeem
UCD Alexander Liesequin
UCD Evan Byram
UCD Rama Parasar
UCD Eric Chen
UCD Nadine Olidan
UCD Jordan Clark
UCD Lola Jung
UCD Ashley Tran
UCD Olivia Patsch
UCD Jacob Charles
UCD Jennie Do
UCD Asia Engel
UCD Cristalia Torres
UCD Kendal Holck
UCD Heidi Anzaldo Ovando
UCD Benicio Orsua
UCD Millie Naranjo
UCD Audrey Youngblood
UCD Tristan McDermott
UCD Peaches Kulik
UCD Natalie Schermer
UCD Jaylen Joyce-Taplin
UCD Myra Emili Sin
UCD Kattie Lopez-Jantaella
UCD Grace Contrehas
UCD Josefina De Melo
UCD Eileen Salinas Garcia
UCD Ansh Datel
UCD Catherine Baldocchi
UCD Brandon Fong
UCD Isabella Herrera
UCD Alexa Baben
UCD Francisco Munive
UCD Courtney Tai
UCD Hannah Ovozco
UCD Julia Headley

UCD Andy Ramos
UCD Edwin Anica
UCD Mihika Deshdande
UCD Mahnoor Rizwan
UCD Jiya Dhillon
UCD Naima Bukhari
UCD Charlie Miller
UCD Nandini Datta
UCD Christina Martinez
UCD Lexi Allyson Sario
UCD Dessya Delgado
UCD Seneca Patchen
UCD Qirui Yuan
UCD Isabella Serna
UCD Nolan Page
UCD Sabrina To
UCD Dianne Soliven
UCD Jada Henriques
UCD Caleb Wu
UCD Kendrick Ly
UCD Lucas Huang
UCD Lucas Huang
UCD Isabella Sarissian
UCD Celeste Summers
UCD Venessa Cuevas
UCD Theodore Kayser
UCD Marcus Vasanharo
UCD Yihan Ren
UCD Yasmine Garcia
UCD Daniela Zuragoza
UCD Humberto Marquez
UCD Ramses Marquez
UCD Razbin Karuidoli
UCD Esmerald Figueroa-Gaspar
UCD Quitze Resuerin-plaza
UCD Ruby Mendoza
UCD Samuel Steiner
UCD Sara Berman
UCD Tia Hoang
UCD Robbie Valdes

CALPIRG

Students

UCD Jayden Johnson
UCD Mohammad Mendahahi
UCD Ty Norvell
UCD Jayce Bradley
UCD Jacob Weller
UCD Naseem Faridnia
UCD Taylor Jones
UCD Itzel Mendez Serrano
UCD Carolina Garcia Arguellaes
UCD Xinrui Wang
UCD Trina Vo
UCD Joseph Bly
UCD Kenneth Jerome
UCD Isabella Savanqsy
UCD Miles Jacobsen
UCD Summer Black
UCD Triston Boyer
UCD Fiona McCluskie
UCD William Duffield
UCD Razaan Abelsalam
UCD Saloni Gajola
UCD Leslie Loda
UCD Squami Saka-Shenayon
UCD Elliott Appleton-Sackett
UCD Selena Lu
UCD Logan Ley
UCD Marlana Hernandez
UCD Antonio Arala
UCD Jesus Cuevas
UCD Yonting Lai
UCD Zaira Muro
UCD HauiJun Zhang
UCD Mikayla Molnar
UCD Charleen Bajarano
UCD Bertrand Lai
UCD Rashelle Ramirez-Wurts
UCD Bee Smith
UCD Angelica Mendez
UCD Moonolow De Clarin
UCD Anthony Nguyen

UCD David Li
UCD Alejandra Ortega
UCD Ben Giordano
UCD Stephanie Regalado--Chia
UCD William Chen
UCD Samuel Cervantes
UCD Alexander Speidel
UCD Saflah Nemr
UCD Estrella Lopez Zavala
UCD Bella Huang
UCD Haiyuan Liu
UCD Malak Odehy
UCD Arvind Sravanakomar
UCD Alexander Renard
UCD Alexa Murillo-umanzor
UCD Naveed Jones
UCD Emma Shigekane-Kraft
UCD Ashanti Gonzalez
UCD Mario Morales
UCD Anndiya Kiburi
UCD Rossana Diaz-Vigil
UCD Nathalie Cortes
UCD Jocelyn VUrbina-Diaz
UCD Nicholas Wallis
UCD Ash Henderson
UCD Xinyi Cen
UCD Nicholas Petersen
UCD Julia Gutierrez
UCD Gabriela Gatica-Lizola
UCD Sabina Sanchez
UCD Vanessa Vega
UCD Mia Fisher
UCD Nathaniel Liu
UCD Hannah Cui
UCD Natalie Kalman
UCD Hayden Gutierrez
UCD Elijah Hung
UCD Melanie Gordon
UCD Ariana Alba
UCD Erendiro Medrano

CALPIRG

Students

UCD James Cruz
UCD Alexa Winston
UCD Patri Murphy
UCD Molly Boyle
UCD Sydney Rau-Kim
UCD Maya Medina
UCD Maxwell Franzblau
UCD Helena Demessle
UCD Miles Bardin
UCD Advait Sanjay
UCD Mingjing Zhong
UCD Maddox Seibert
UCD Parker Clymer-Ergelhart
UCD Xinyu Chen
UCD Jen Lir Wu
UCD Gabriella Rodriguez
UCD Joy Klier
UCD Alexander Valasco
UCD Leora Thendriawan
UCD Noel Zheng
UCD Nicole Mlaullerena
UCD Tiana Rivas
UCD Michael Tanaputra
UCD Kaci Yip
UCD Phoebe Randois
UCD Angel Tran
UCD Katherine Ruiz
UCD Alejandro Cabrera
UCD Katherine Avila-Diaz
UCD Alexa Gomez
UCD Angel Preet Thino
UCD Artemis Shatalova
UCD Wesley Yu
UCD Barah Albuhwailah
UCD Ava Amos
UCD Lily Soucek
UCD Ann Carney
UCD Ayinor Su
UCD Elizabeth Farias-Mendoza
UCD Kathy Tran

UCD Jian Da Zhuang
UCD Maleeha Lateef
UCD Narumi Sekiya
UCD Sharick Merchan Gomez
UCD Jole Sanchez
UCD Sofia Ruelas
UCD Edgar Duckworth
UCD Gia Truong
UCD Chloe Chen
UCD Jennifer Gonzales-Calderon
UCD Elvis Sandoval
UCD Julio Orendain
UCD Jonathan Wu
UCD Caroline Silva Snachez
UCD Bethany Masum
UCD Harashini Anand
UCD Gabe Malpas
UCD Hanfu Zhang
UCD Sarah Lopez
UCD Madison Smith
UCD Tianen Wu Liu
UCD Sarah Siu
UCD Ojas Mishra
UCD Gemma Ahern
UCD Ian Muller
UCD Insha Syed
UCD August Procter
UCD Taylor Harrison
UCD Tianna Le
UCD Franklin Cartagena
UCD Logan Kingsland
UCD Dena Puam
UCD Kaitlyn Menjivar-Esquivel
UCD Diego Murguia
UCD Alexander Sumner
UCD Jack Newman
UCD Sam Papp
UCD Pedro Zapara
UCD Sarah Barnes
UCD Fernando Vega

CALPIRG

Students

UCD Juan Sanchez
UCD Sylvie Thompson
UCD Ziqing Yu
UCD Eva Liu
UCD Seth Esteves
UCD Lavanya Gowthaman
UCD Delilah Belerra
UCD Melanie Dawameno
UCD Heidi Aleman-Jimenez
UCD Timothy Corcoran
UCD Carmen Jimenez
UCD Emelyn Macedo
UCD Johnathan Ouest
UCD Aarya Kalisetri
UCD Sade Adams
UCD Emma Eidson
UCD Alyssa Bathke
UCD Ruby Aguilar
UCD Christina Aguila
UCD Quynh Le
UCD Sofia Soto
UCD Stephanie Castro De Leon
UCD Sahaar Tukhi
UCD Ethan Sainz
UCD Aethan Santos
UCD Jonah Kalmar
UCD Gabriela Barriga Tapia
UCD Kevin Ramos
UCD Jauaan Bhakta
UCD Rithika Oumapathy
UCD Sabrina Speckman
UCD Mikayla Bailey
UCD Freya Robinson
UCD Brian Dao
UCD Kevin Chaires-Manrique
UCD Katelyn Kennedy
UCD Maryssa Olvera
UCD Michelle Espinoza Lopez
UCD Khalid Al Ghamdi
UCD Jocelyn Back

UCD Gretzel Lopez Garcia
UCD Liu Keona
UCD Sherwin Li
UCD Michelle Nguyen
UCD Michaela Glover
UCD Jasmin Mccollum
UCD Diego Rodriguez Ruiz
UCD Alexander Hoffman
UCD Aditi Anand
UCD Leo Berahovich
UCD Vanessa Cruz Perez
UCD Juny Gow-Smith
UCD Brandon Gonzalez Arenos
UCD abena osei-bonsu
UCD Anthony Santa Ana
UCD Taylor Pham
UCD Dioso Barbosa
UCD Itzel Herrera Mejia
UCD Ved Jamadagni
UCD Indio Alvardao
UCD Dongyang Xuanyuan
UCD Angelo Tumonong
UCD Ivan Cervantes
UCD Stephanie Castanon
UCD Warren Jacobson
UCD Madison Burns
UCD Gilbert Galran
UCD Jordan Gaspar
UCD Stormi Alejandre
UCD Dorado Barrios
UCD Larisa Castellanos
UCD Stephanie Cabrera
UCD Jesse Reason
UCD Abbey Connolley
UCD Devin Shah
UCD Elise Meza
UCD Emery Hansa-Beavers
UCD Alyssa Riordan
UCD Irene Park
UCD Addison Gilbert

CALPIRG

Students

UCD Annabelle Aarts Coley
UCD Iztli Quinones
UCD Madeline Lazarus
UCD Jalini Kumar
UCD Benjamin Thomas
UCD Mia Fajardo
UCD William Jacobs
UCD Natalie Dennis
UCD Alexandra Hoshino
UCD William Gov
UCD Emma Sarty
UCD Ferdinand Kuanda
UCD Jinpeng Li
UCD Danni Wang
UCD Jon Nathan Alberto
UCD Jahi Miller
UCD Qi Quan
UCD Rohan Rao
UCD Niya Gonzales
UCD Brian Antczak
UCD Brenlyn Green
UCD Maximilian Schmidt
UCD Timothy Austin
UCD Danielle Rasmussen
UCD Wade Dennis
UCD William Holley
UCD William Holley
UCD Cadince Allen
UCD Ashley Arellanes
UCD Henry Xu
UCD Banyen Holladay-McCarthy
UCD Messina Ponce
UCD Liam Giger
UCD Jayda Young
UCD Sia Puri
UCD Andrea Fernandez Cordova
UCD Raihana Latifzada
UCD Hammad Mehmood
UCD Sanjar Atmar
UCD Jamillah Key

UCD Amy Vazquez
UCD Cory Ryan
UCD Normay Arriola
UCD Evan Feldman
UCD Anthony Nguyen
UCD Juliana Betanzos
UCD Nicholas Aparicio-Arrue
UCD Neeharika Janz
UCD Aarzo Patel
UCD Dustin Tran
UCD Arman Mirza
UCD Selena De La Cruz
UCD Diana Nguyen
UCD Andrea Luna
UCD Joshua Ekstrom
UCD Joey Lee
UCD Diya Murthy
UCD Christian Ledesma Villa
UCD Norvin Sevilla
UCD Koby Guzman
UCD Mariana Ortega-Nunez
UCD Iselle Alejandra Ponce-Villanueva
UCD Freya Williams
UCD Olivia Bella
UCD Kent Patey
UCD Aura Khare
UCD Sofia Wright
UCD Sarah Shaw
UCD Florence Chnlant
UCD Xochitl Ramirez
UCD Justine Nguyen
UCD Cinthia Majano
UCD Emmy Macrae
UCD Kailee Suess
UCD Martin Alvarez
UCD Karley Markar
UCD Tegan Leong
UCD Simone Kane
UCD Elsa Cespedes Romano
UCD Angelina Phan

CALPIRG

Students

UCD Jessica Grimaldo
UCD Marissa Galvan
UCD Evalisa Encinas
UCD Bianca Tomat
UCD Melani Ruan
UCD Milagros Vasquez Morales
UCD Mary Cabrera
UCD Stella Winn
UCD Irie Odom
UCD Alejandro Godoy Soria
UCD Omar Campos
UCD Raamis Malik
UCD Diego Salgado
UCD Jiacheng Wu
UCD Summer Woodward
UCD Maritza Ortega
UCD Shunhua Hsu
UCD Tammy Wang
UCD Hayden MacDougall
UCD Nihal Prabhu
UCD Allison Arnott
UCD Michael Tucker
UCD Harjot Gill
UCD Emily Villegas
UCD Kimberly Gonzalez-Cardenas
UCD Monica Nader
UCD Joseph Rueff
UCD Miranda Jaramillo
UCD Victoria Diaz Gonzalez
UCD Hailey Gentry
UCD Robert Bowers
UCD Hannah Villanueva
UCD Laurence Alizodeh-Fakori
UCD Simon Ellison
UCD Ryan Taylor
UCD Monica Shieh
UCD Ashley Fenical
UCD Tristan Najarro
UCD Reilee Handlin
UCD Eliot Ticer-Wurr

UCD Aarish Adams
UCD Xuexuan Liu
UCD Curren Millsap
UCD Alexandra Gryevstov
UCD Jerusalem Castaneda
UCD Jason Ward
UCD Jason Ward
UCD Jiatong Duan
UCD Logan Craycraft
UCD Sarah Miyamoto
UCD Karansher Sidhu
UCD Ashley Carroll
UCD Ashley Han
UCD Vallerie Morones
UCD Mandy Situ
UCD Katelyn Eproson
UCD Kevin Mortin
UCD Rogelio Martinez-Lopez
UCD Nova Camacho
UCD Alexandra Teese
UCD Karol Cash-Tapia
UCD Jalissa Bautista
UCD Ricardo Guzman-Miranda
UCD Joshua Puckett
UCD Emily Thai
UCD Megan Owen
UCD Sandra Xiong
UCD Mckenzie Mova
UCD Eva Xochitl Barricklow
UCD Jane Rosenthal
UCD Matthew Friedenthal
UCD Noria Hui
UCD Madison Kernahan Kenney
UCD Emma Schaden
UCD Vickie Bach
UCD Sydney Zeigler
UCD Nicholas Pooley
UCD Rudy Navarro
UCD Summer Santich
UCD Jennifer Peng

CALPIRG

Students

UCD Justin Esguerra
UCD Ruby Hernandez
UCD Paris Rai
UCD Esmaullah Qarabaghai
UCD Anna Burt
UCD Prachi Sharma
UCD Emily Cuenca
UCD Rupneet Mann
UCD Sandhya Pfile
UCD David Wu
UCD Lauren Ramras
UCD Matheu Pool
UCD Bailey Hoffman
UCD Alex Dang
UCD Esmeralda Gonzalez
UCD Riley Gonzalez
UCD Sameer Goswami
UCD Ryan Hill
UCD Emily Le
UCD Zoe Romine
UCD Delaney Holmes
UCD Krishna Ram
UCD Donghao Wang
UCD Nikole Gin
UCD Ifeoluwa Tayo
UCD Delfin Kirsch
UCD Aracely Ramirez Sanchez
UCD Weikai Shao
UCD Serena Sargent
UCD Brian Le
UCD Mickey De La Torre
UCD Kevin Duffy
UCD Nico Ortega
UCD Langston Wu
UCD Gabriel Fonstantin
UCD Jaena Fontillas
UCD Lindsay Hum
UCD Jacob Reddy
UCD Thomas Cordova
UCD Laure Devry

UCD Muyang Li
UCD Ashley Ramirez
UCD Jack Perrin
UCD Nitish Ramani
UCD Harrison Guo-Albright
UCD Charlie Johnston
UCD James Luony
UCD Zainab Almuaalem
UCD Joshua Wellman
UCD Astziri Jimenez
UCD Ridge Rivera
UCD Gabrielle Pacquette
UCD Kamie Lam
UCD Adna Banjic
UCD Nisha Sahota
UCD Haley Hunt
UCD Ashlyn Sharma
UCD Emiey Cordero
UCD Lara Taylor
UCD Jane Sossaman
UCD Zilin Liu
UCD Diego Rimando
UCD Isabella Clifton
UCD Vivek Handebagh
UCD Lein Elbgal
UCD Manreet Sidhu
UCD Hardy Hernandez
UCD Lily Markson
UCD Nathan Ngyuen
UCD Yuxing Cai
UCD Logan Redfern
UCD Ria Gangwar
UCD Minerva Ghosh
UCD Arshee Gill
UCD Yixvan Chen
UCD Sanriago Hernandez
UCD jennoh Rhee
UCD Charles Anderson
UCD Dalia Escobar
UCD Ana Muller

CALPIRG

Students

UC Berkeley Students

UCB Eli Bresler
UCB Manasaa Meenakshi
UCB Sophia Panigrani
UCB Monica Schneck
UCB Sam Grotenstein
UCB Anaïs Roatta
UCB Iglesias
UCB Julia Linney
UCB Aiden Basilio Herna
UCB Miles Hoogner
UCB Selena Perez
UCB Ashley Gong
UCB Arushi Maheshwar
UCB Calvin Lee
UCB Ashley Puchkova
UCB Jenifer Cheng
UCB Rika Patricia Pinto
UCB Busk Delacun
UCB Jacob McLure
UCB Sia Dihenia
UCB Garry Faison
UCB Maryam Ghazzali
UCB Kyle Nelson
UCB Xochitl Montalvo-Macuixtle
UCB Ingrid Morales
UCB Dushanti Patterson
UCB Ethan Hersey
UCB Harshini Pulivarthi
UCB Andrew Guzman
UCB Marissa Ribein
UCB Alexander Crisafulli
UCB Gianna Hynson
UCB Huan Nguyen
UCB Mariah Gutierrez
UCB Kyle Cheng
UCB Zara Brandt
UCB Annie Foo
UCB Luke Cassiano

UCB Julia Schwichtenberg
UCB Vincent Hsu
UCB Astrid Nymo-young
UCB Cady Winuk
UCB Phoebe Shen
UCB Sofia Garnica Aguilar
UCB Henry Hayes
UCB Soph Padua
UCB Fiona Gaffney
UCB Ella Thompson
UCB adrian Jacobs
UCB Aaron Xu
UCB Beatriz Ramirez
UCB Esteban Soria
UCB Sara Warford-Crowe
UCB Anthony Jin
UCB Anushka Bhagavathula
UCB Noah Sakkour
UCB Sarabaesh Srikumar
UCB Hailey Strayer
UCB Harrison Andrews
UCB David Cease
UCB Lu He
UCB Rohan Sontakke
UCB Tomas Luque
UCB Noelani Vernon
UCB Melvin Estrada Gonzalez
UCB Abdullah Almatrafi
UCB Dwight Flores
UCB Abdulrahman Alsaegh
UCB Ayden Reading
UCB Ganesh Kalakheti
UCB Margo Rebone
UCB Maya Rosette
UCB Cameron Cox
UCB Leo Hong Johnson
UCB Milo Mechem-Miller
UCB Lesly Contrevas
UCB Abby Grace
UCB Tiago Eckstein

CALPIRG

Students

UCB Nika Zipper
UCB Kaitlyn Morales
UCB Emily Nguyen
UCB Annie Johng
UCB Francis Waligora
UCB James Bowers
UCB Ai Mizokami
UCB Dominic Bankovitch
UCB Maya Shafshak
UCB Sophie Johnson
UCB natasha Tiwari
UCB Ashley Figueroa
UCB Zitlaly Fuentes
UCB Max Geiger
UCB Olivia Snider
UCB Piyusha Kaur
UCB Joshua Chen
UCB Jordan Jones
UCB Vanessa Remsey
UCB Mark Picard
UCB Sofia Hernandez
UCB Grace Dallarda
UCB Ella Akin
UCB Dylan Clark
UCB Yumeng Zhang
UCB Antonio Corrales
UCB Izzie Zuromski
UCB Mariana Lopez
UCB Mara Partida
UCB Caspian Campbell
UCB Alan Morrison
UCB Lucia Stankovic
UCB Jaiden Bareng
UCB Katarina Blandon
UCB Jordan Coby
UCB Ammon Obrien
UCB Yingzhe Du
UCB Lena Ramos
UCB Nada Ibrahim
UCB Athena Bernheim

UCB Kira Holman
UCB Ashley Campbell
UCB Madison Lee
UCB Lauren Yam
UCB Eli Leal-Schuman
UCB Cara Wong
UCB Leon Akhavan
UCB Ranma Rovabah
UCB Joann Zhang
UCB Kai Matera
UCB Anastacia Briviesca
UCB Karena Rawles
UCB Dylan Miller
UCB Saidy Reyes-Mazariegos
UCB Simran Lakhani
UCB Milo Bernini
UCB Quentina Simenz
UCB Maram Alhomidi
UCB Sylvia Wu
UCB Bhavya Anand
UCB Khari Lester
UCB Sophia Limoncelli
UCB Mariana Hernandez
UCB Ivy Yan
UCB Anushka Manuaz
UCB Kathy Phan
UCB Ziannie Rivera
UCB Jack Bunch
UCB Hakim Owen
UCB Emma Young
UCB Sarah Goody
UCB Israel Gonzalez
UCB Bridget Byrne
UCB Ryan Luftman
UCB Declan Smith
UCB Erica Bennet
UCB Yuwei Fong
UCB Tristan Cifuentes
UCB Ethan Gallucci
UCB Charmi Buddaluru

CALPIRG

Students

UCB Jamie Guitron
UCB Cristo Barragan
UCB Heidy Gonzalez
UCB Valeria Jimenez Beltran
UCB Darian Murillo
UCB Matthew Dacanay
UCB Elise Stimson
UCB Alexa Murillo Cuevas
UCB Malia Campagna
UCB Shkila Movass Aghi
UCB Iwalani Martinson
UCB Harsh Kumbhat
UCB Stacy Kim
UCB Victoria Ko
UCB Leila Winn
UCB Marianne Schelvis
UCB Karol M Hernandez
UCB Yesenia Ochoa
UCB Kaela Beltran
UCB Iris Mang
UCB Hayden Moelter
UCB Jeremy Benin-Yap
UCB Tali McPeters
UCB Leila Khan
UCB Marisol Garibaldi
UCB Charlotte Gerner
UCB Liliana Vasquez-Herrera
UCB Ava Bassirat
UCB Justin Wong
UCB Jesenia Yanez-Hernandez
UCB Gabriel McNulty-Port
UCB Florance Zhang
UCB Devon Christensen
UCB Salvador Leon Gonzalez
UCB Leann Le
UCB Celia Botelho
UCB Zino Xarios
UCB Julia Thomson
UCB Noa Margalith
UCB Missy Jin

UCB Cielo Aguirre
UCB Ana Curtis
UCB Ethan Cohen
UCB Hazel Xie
UCB Elise Won
UCB Vanessa Castillo
UCB Nayeli Glaude
UCB Rory Hinkle
UCB Samuel Brown
UCB Erika Sun
UCB Amanda Zhang
UCB Sarah Forsythe
UCB Juliana Mashni
UCB Myla Pitzer
UCB Katelyn Medina
UCB Sophia Ma
UCB Eva Abdul-Rahim
UCB Grace Zheng
UCB Andrea Mateo
UCB Chloe Ortiz
UCB Hilary Wong
UCB Zuniya Zapeta-Huggans
UCB Ariela Lara
UCB Evan Grant
UCB Anahi Araiza
UCB Nick Godbehre
UCB David Jarolimek
UCB Dustin Damwyk
UCB Michela Maher
UCB Marcus Wang
UCB Sherlyn Lopez
UCB Brendi Belasquez
UCB Grace-May Hansen
UCB Capucine Taglioni
UCB Janette Orozco
UCB Candace Wong
UCB Aubrey Peterson
UCB Simon Glaza
UCB Shreya Gunasekar
UCB Jeremy Ramirez

CALPIRG

Students

UCB Liam McEvoy
UCB Andrew Qin
UCB Makenna Naoe
UCB Maria Olivares
UCB Athina Vrosgou
UCB Beatriz Ramirez
UCB Marissa Cuevas
UCB Ethan Escat
UCB Hudson Schuchmann
UCB Emma Nathanson
UCB Fabian Perez
UCB Caroline Xian
UCB Kimberly Duong
UCB Yousef Abubakr
UCB Jose Alfredo Salcedo
UCB Joyce Vang
UCB Natalie Guerrero
UCB Brandon Clue
UCB Natalie Greene
UCB Camilla Fonoberov
UCB Faris Khandaqji
UCB Oscar Olivarez
UCB Gil Laderzky
UCB Callan Mitchell
UCB Serigne Tonnkara
UCB Brayan Chamorro
UCB Brian Speicher
UCB Jonah Wounai
UCB Donovan Fanella
UCB Norina Xu
UCB Milly McKenzie
UCB Jaylen Marshall
UCB Erika Alfaro
UCB Dexter Camara
UCB Hannah Cook
UCB Kimberly Coleman
UCB Priya Shah-Allen
UCB Gobind Thind
UCB Juan Martinez
UCB Alexa Hua

UCB Maia Dimas
UCB Lyria Zhu
UCB Cristian Ramirez
UCB Sanjeh Muehukumarn
UCB Fatima Montanu
UCB Arshia Zacgarani
UCB Sophia Sebbag
UCB Tibet Yakut
UCB Andrea Cervantes
UCB Surya Krishnapillai
UCB Jay Jorge
UCB Lana Chao
UCB Leo Nagel
UCB Abigail Keller
UCB Theodore Lysek
UCB Jokunrakjar Chhun
UCB Bella Sonew
UCB Justin Shaw
UCB Afton Okwu
UCB Emmeline Clougherty
UCB Chase Enyart
UCB Alexander Call
UCB Sasha Neyra
UCB Preston Peeler
UCB David Cho
UCB Lynda Otero
UCB Jashanpreet Nagra
UCB Lukas Harris
UCB Henry Williams
UCB Lianna Ursua
UCB Samuel Gonzalez Morales
UCB Kayla Chang
UCB Oliviona Nou
UCB Tara Yasmin Akin
UCB May Thu Lin
UCB Luke Pavelchik
UCB James Mayer
UCB Daniel Samony
UCB Magali Ramirez
UCB Kruna Masic

CALPIRG

Students

UCB Ivy Childers-Nuelle
UCB Charlotte Beckner
UCB Daniel Gutierrez
UCB Jeffrey Lin
UCB Riley Starks
UCB Chance Quarry
UCB Talal Ayoub
UCB Alondra Garcia
UCB Jimé Fajardo
UCB Riley Keany
UCB Nevaeh Carr
UCB Luca Haynes
UCB Emily Telles
UCB Madeleine Duchesne
UCB Haili Skoviak
UCB Sara Faiyaz
UCB Issac Hwang
UCB Siena Buri
UCB Primo Pelczynski
UCB Ona Aschie
UCB Maya Sofer
UCB Jeremy Dupras
UCB Tiffelyn Kurniawan
UCB Connie Lin
UCB Jaden Hocutt
UCB Kolby Caban
UCB Simon Campbell
UCB Samirah Jackson
UCB Emily Barcala
UCB Ethan Nguyen
UCB Imahni King
UCB Clara Jensen
UCB Jason Campbell
UCB Leah Cederborg
UCB Nivedita Rao Muralidhar
UCB Hannah Hodges
UCB Kristen Fu
UCB Stella Manning
UCB Alexandra Matthews
UCB Velize King

UCB Stephen Park
UCB Joanna Bai
UCB Dalia Canseco
UCB Elaine Pimentel
UCB Olivia Lee
UCB Tenzin Dechen
UCB Cy Khaldi
UCB Eliot Cummings
UCB Rafine Som
UCB Satwik Panigrahi
UCB John Vincent
UCB Alexandra McClintock
UCB Calvin Carter
UCB Gianni Pina
UCB Vian Hwang
UCB Gustavo Damian Danemann
UCB Henry Bei
UCB Sriya Vedartham
UCB Natalia Sandoval
UCB Uchechi Mbakogu
UCB Dina Herrera
UCB Edora Roeil
UCB Finn Finneran
UCB Joshua Manduriao
UCB Daniella Gutierrez
UCB Lizet Cervantes
UCB Erin McDonald
UCB Zoe Keenan
UCB Braelyn Carroll
UCB Evan Dean
UCB Nicholas Goodin
UCB Edward Pierpont
UCB Massa Coulibaly
UCB Ava Povrasgari
UCB Declan Fitzgerald
UCB Theodore Hibbard
UCB Grace Basom
UCB Lily Wang
UCB Vanesa Cruz
UCB Alexis Sasser

CALPIRG

Students

UCB Briseyda Olivares
UCB Sofia Orense
UCB Bruce Suwvannasane
UCB Hannah Fielder
UCB Evangeline Lim
UCB Tanmay Neema
UCB Luca Vicisano
UCB Jakob Gundersen
UCB Brooke Laur
UCB Natalie Reel
UCB Julia Hunt-Davis
UCB Saranya Anandakumar
UCB Daniel Grover
UCB Neha Ravikumar
UCB Eesha Santosh
UCB Sebastian Renteria
UCB Isabella Adame
UCB Aryan Gupta
UCB Madison Dingee
UCB Elena Tambito
UCB Thijmen Dejong
UCB Kiara Chapman
UCB Abigail Lin
UCB Adriana Vasquez
UCB Audrey Ryder
UCB Ailiah Ruthven
UCB Robert Gao
UCB Ros Herling
UCB Annabella Adams
UCB Jennifer Flores
UCB Avi London-Wynne
UCB Cate Menotti
UCB Aiden Trudeau
UCB Ayanna Navarro
UCB Tyler Lafayette
UCB Suhayb Mirza
UCB Lauren Meull
UCB Naomi Villescas
UCB Bebbly Liu
UCB Andie Yi

UCB Mia Ochoa
UCB Allison Kuan
UCB Cole Kellison
UCB Danielle Gomez
UCB Milo Jhun
UCB Anisa Chacon
UCB Emma Hernandez
UCB Selina Tran
UCB Dean Elia
UCB Jay Husson
UCB Lila Portis
UCB Wang Houkun
UCB Leah Grossman
UCB Lena Pham
UCB Taylor Wolf
UCB Luc Rathbun
UCB Sam Clay
UCB Gianni Shaw
UCB Ava Cooper
UCB Britney Doan
UCB Maddy Black
UCB Kayla Won
UCB Jack Connell
UCB Stephanie Zavala
UCB Isabel Yrungaray
UCB Matthew Corbo
UCB Wesley Ishida
UCB Ato Aliping
UCB Yuma Raux-Moriwaki
UCB Edvin C.
UCB Francisco Rodriguez
UCB Tacy Tran
UCB Avery Key
UCB Ellery Benedict
UCB Tatiana Solano
UCB Willow Lewis
UCB Ami Miyoko
UCB Addisyn Nebeker
UCB Felix Zhang
UCB Gina Hua

CALPIRG

Students

UCB Chelsea Cao
UCB Dayanara Flores
UCB Alexandra Fiske
UCB Lorissa Zhou
UCB Siying Chen
UCB Michael Judson
UCB Christian Lucas
UCB Grace Isaac
UCB Jaylacristene Hall
UCB Eedo Isaac Gabbai
UCB Artyom Yuzupov
UCB Alberto Gomez
UCB Madeline jannes
UCB Rosemary Gomes
UCB Marc Tutwiler
UCB Genevieve Giotta
UCB Julius Weisberg
UCB DJ Nunley
UCB Lynn Nunley
UCB Vishnu Rajeen
UCB Alondra Castillo
UCB Lexi Barrera
UCB Sofia Arranaga
UCB Jalissa Ontiveros
UCB Mayrin Ceja
UCB Natalie Bravo
UCB Hsinling Yu
UCB Griffin Joseph
UCB Sabrina Banuelos
UCB Dasha Yurkevich
UCB Francescano Ravian
UCB Karissa Lin
UCB Isabella Chiesa
UCB Ryan Little
UCB Elizabeth Varghese
UCB Lola Ravenel
UCB Clara Tae
UCB Kelly Loc
UCB junn brooms
UCB karly jones

UCB john shaw
UCB christian figueroa
UCB sheeva pham
UCB blake palmer
UCB sophia durand
UCB alex diaz
UCB valeria velazquez
UCB ethan liu
UCB amver castillo
UCB diego pineda
UCB Hannah kleiger
UCB lucia greenland
UCB esha banerjee
UCB tiarra wu
UCB sadie greenberg
UCB Joyce Hu
UCB Ben Waldher
UCB Sophie Shumilov
UCB Isabelle Huxley
UCB Rowan Fitzgerald
UCB Takaki Ito
UCB Lola Herry
UCB Elizabeth Hung
UCB Marissa Cuevas
UCB Emilio Mendoza-Barda
UCB Amelia Khor
UCB Joselene Lafontant
UCB Matthew Lee
UCB Julian Rayford
UCB Leandro Lopez
UCB Sarah Arcelo
UCB Charlotte Zhang
UCB Esbeidy Camos
UCB Angelina Moreno
UCB aidan stecher
UCB anna mcgarry
UCB landon gerry
UCB oluwatamilore balogun
UCB Kei Miyanishi
UCB Sienna Shille

CALPIRG

Students

UCB Sihan Cheng
UCB Nathan Mills
UCB Jing Mingqiu
UCB Ellie Choi
UCB Chantell Tapia
UCB Ray Williams
UCB Daniela Adler
UCB Cindy Xin
UCB Tara Kumar
UCB Mariel Zeltzer
UCB Harmonia Kim
UCB Sebastian Betts
UCB Heidi Garcilazo
UCB Satvika Iyer
UCB Pahel Tandel
UCB Nataliah Cornejo-Ayers
UCB Teresa Huang
UCB Olivia Bennett
UCB Paris Carr
UCB Alyssa Zlaket
UCB Victoria Phyras
UCB max hepperlin
UCB Betsabe Acosta Ramos
UCB Audrey Pollack

UC Santa Cruz Students

UCSC Yudi Feng
UCSC Benjamin A
UCSC Emily Yee
UCSC Lila Owen
UCSC Liam Treat
UCSC Sujin Lee
UCSC Yunan Wang
UCSC Kendra Knieger
UCSC Felix Boulton
UCSC Lewis Thompson
UCSC William Bulfin
UCSC Mara Mesic
UCSC Sangwon Hyun
UCSC Aaja Ouellette
UCSC Gabriel Specht
UCSC Aidan Kim
UCSC Kara Frances
UCSC Lou Acevedo
UCSC Selma Snagic
UCSC Stephen Rainbury
UCSC Travis Fung
UCSC Marco Torre
UCSC Diana Zhu
UCSC Liam Seidenglanz
UCSC Samantha Candelaria
UCSC Isalel Waste
UCSC Farihu Letel
UCSC Celestina Calero
UCSC Alice Gerchanousky
UCSC Shoto Morosaki
UCSC Jaime Maillard
UCSC Rhayu Hu
UCSC Kane Rosbough
UCSC Serena Marchesi
UCSC Sophia Robinette
UCSC Gabriel Wyatt
UCSC Matthew Savage
UCSC Naomi Mhamunkar

CALPIRG

Students

UCSC Lam Cardana
UCSC Owen Geer
UCSC Aaron Jeffries
UCSC Ignacio Wallington
UCSC Malachi Nguyen
UCSC Jordan Forman
UCSC Ahson Momin
UCSC Jacob Taranayo
UCSC Legend Mall
UCSC Joshua Wing
UCSC Sora Feeney
UCSC Lucy Gong
UCSC Katelyn Duran
UCSC Samantha Montejano
UCSC Muhammad Raz
UCSC Victoria Rimmey
UCSC Arkhur Vasseur
UCSC Jennifer Valencia
UCSC Luna Shaw
UCSC Roxana Rodriguez
UCSC Sam Benarron
UCSC Kylie DeAlba
UCSC Drake Griffin
UCSC Yael Gutierrez
UCSC laweku Mensan
UCSC ninsune yang
UCSC Kelly Leighton
UCSC Mia Yee
UCSC Max Mondragon
UCSC Emily Gomez
UCSC Vday Patel
UCSC Tewodros Berry
UCSC Parisa Oftadeh
UCSC Monav Choudhary
UCSC Paulo Conta
UCSC Nicholas Wadsworth
UCSC Riley Gervans
UCSC Tanmay Garg
UCSC Mayte Flores
UCSC Matthew Hamilton

UCSC Sofia Lindsay
UCSC Zaeem Niazi
UCSC Dannica Zamora
UCSC Audrey Eldredge
UCSC Myra Pittman
UCSC Emily Smith
UCSC Limar Gad
UCSC Jolea Moes
UCSC Rachel Tanis
UCSC Anna Owyong
UCSC Sana Rao
UCSC Jaslyn Klein
UCSC Anushri Das
UCSC Natalie Clifford
UCSC Elle De Lyons
UCSC Selia Martinez
UCSC Jessica Soto
UCSC Claire Galbo
UCSC Zoe Mccall
UCSC Amelie Laser
UCSC Quinn Bartsch
UCSC Ethan Rudy
UCSC Nishad Chavan
UCSC Xavier Grow
UCSC Srishta Hazra
UCSC Chris Garcia
UCSC Isaiah Jamerson
UCSC Javier Santos
UCSC Gavin Turner
UCSC Chris Lam
UCSC Christophe Moll
UCSC Yiting Lin
UCSC Matthew Barcenas
UCSC Adam Enriquez
UCSC Skye Dameron
UCSC Erin Eagleson
UCSC Lauren Fraser
UCSC Zachary Lyne
UCSC Logan Wells
UCSC Michael Magsino

CALPIRG

Students

UCSC Leo Santo Battaglia
UCSC Margot Anne Katzman-Tranah
UCSC Claude Kaplow-Healy
UCSC Tewodros Kasa Berry
UCSC Gwnwvieve Rene Barton-Mattos
UCSC Alex Ryan Castilla
UCSC Kayla Mihyun Geddis
UCSC Natalia Anais Cornejo
UCSC Ayanna Mays
UCSC Jennifer Guadalupe Flores
UCSC Tatum Phyllis Darlington
UCSC Bianca Noemi Haro Galvan
UCSC Osvaldo Delgado
UCSC Amra Sirak Brook
UCSC Yvette Kadi Avugwi
UCSC Serene Su
UCSC Tuesday Stern
UCSC Nicholas Christopher Timbers
UCSC Quincy Ambrose Strange
UCSC Ari Kai Aarons
UCSC Mateo Monteiro
UCSC Ketter Kruse
UCSC Carly Pavlin
UCSC Shannon Wiltshire
UCSC Rylee Birtja
UCSC Piper Eglim
UCSC Sean Leehane
UCSC Catherine Jones
UCSC Samantha Andrade
UCSC Anna Pitkin
UCSC Nelson Li
UCSC Deep Sekhon
UCSC Alexis Gold
UCSC Sarah Qazi
UCSC Maddy Arnold
UCSC Fia Campos Layne
UCSC Ayla Baptiste
UCSC Daniel Ward
UCSC Laila Cisneros
UCSC Claudia Gutierrez

UCSC Isabella Maitia
UCSC Joe Hargon
UCSC Shilo Liu
UCSC Thomas Holland
UCSC Shixuan Fang
UCSC Oliver Cinto Ajpop
UCSC Sheila Poz
UCSC Quoc Ha Tran
UCSC Loic Gramkowski
UCSC Chris Franz
UCSC Todd Rexius
UCSC Brooke Cosand
UCSC Sharad Luna
UCSC Kayla Hernandez
UCSC Thomas Wedewer
UCSC Catalina Interiano
UCSC Jasmine Morrow
UCSC Pothi Reyes Hodges
UCSC Luca O'shea
UCSC Brissa Gonzalez
UCSC Sean Decuir
UCSC Samuel Chong-Tautz
UCSC Isabelle Engstrom
UCSC Riddhika Sharma
UCSC Gauri Jain
UCSC Ashton Rivers
UCSC Liam Seidenglanz
UCSC Daryl Jones
UCSC Rachel Luo
UCSC Deeptesh Dey
UCSC Anurag Umale
UCSC Iman Oshaghi
UCSC Ashish Lama
UCSC Ricardo Carrillo
UCSC Natalia Huerta
UCSC Roshini Muppana
UCSC Bali Welch
UCSC Jayden Kollmann
UCSC Mugdha Dey
UCSC Daniel Martinez

CALPIRG

Students

UCSC Camrin Felkins	UCSC Faran Ahmad
UCSC Alejandra Guardado	UCSC Oskar Brady
UCSC Jillian Hawks	UCSC Jose Fausto
UCSC Jazmine Teran	UCSC Jasmine Maung
UCSC Emilio Giamanco	UCSC Joanna Torralba
UCSC Jullian Oliquiano	UCSC Natalie Pile
UCSC Molly Schinnerer	UCSC Zomaya Boggeri
UCSC Celia Testi	UCSC Lawrence Wong
UCSC Isabel Louie	UCSC Finn Sparlowe
UCSC Michael Lowe	UCSC Kian Hamzei
UCSC Sean Esler	UCSC Sharad Luna
UCSC Leilani Callum	UCSC Lucille Shakman
UCSC Victor Cruz	UCSC Jocelyn Starr
UCSC Saja Tushuna Duchicela-Trujillo	UCSC Angelica Matehuala
UCSC Kyra Yen Khanh Le	UCSC Sofia Lizaranzu
UCSC Kevin Chen Bozarth	UCSC Matthew Fusscas
UCSC Emily Lynn Kittredge	UCSC Carter Bostwick
UCSC Hannah Jane Henderson	UCSC Aidan Meek
UCSC Camille Leah Garipova	UCSC Simrit Sekhon
UCSC Claire Elizabeth Mann	UCSC Thomas Milner
UCSC Bushra Basma Rashid	UCSC Justin Kuo
UCSC Vibha Hari	UCSC Kylah Camel
UCSC Isabella Bernstein	UCSC Carlos Menjivar
UCSC Juliette Ann Vazquez	UCSC Jasper Lusson
UCSC Phoenix Strachan Rumbaugh	UCSC Justice Moore
UCSC Sam Vo	UCSC Basma Almandil
UCSC Nikolas Perez	UCSC Liam Rosakranse
UCSC Siri Gowda	UCSC Meryt Roantree
UCSC Alexei Kvitsinski	UCSC Jack Farris
UCSC Casper Teeuwisse	UCSC Lucas Mccann
UCSC Audrey Lewerenz	UCSC Crystal Fan
UCSC Katie Dalessi	UCSC Lucy Reese
UCSC Ingrid Derby	UCSC Ivar Flores
UCSC Gianna Moore	UCSC Hailie Lopez
UCSC Charles Bangham	UCSC Lydia Cayer
UCSC Guadalupe Melchor	UCSC Finn Thwaite Turunc
UCSC Owen Mann	UCSC Leilah Hodges
UCSC Nora Leininger	UCSC Matisse Marquez
UCSC Ezra Jones	UCSC Feem Niak
UCSC Jacob Trader	UCSC Kasandra Bui

CALPIRG

Students

UCSC Joseph Dimarco
UCSC Andrew Collazo
UCSC Alexander Yu
UCSC Sahil Chada
UCSC Veronica Houghton
UCSC Bella Pinzini
UCSC Reina Sanchez
UCSC Guadalupe Aguilar
UCSC Grace Winkelman
UCSC Ryan Shantz
UCSC Avalon Neal
UCSC Fern Chambers
UCSC Ananya Patel
UCSC Ailany Rodriguez
UCSC Abigail Thao
UCSC Linda Quintanilla
UCSC Jacob Abraham
UCSC Kavin Suresh Kumar
UCSC Ian Hudwut
UCSC Jocelyn Gutierrez
UCSC Savannah Strongman
UCSC Saanvi Pathare
UCSC Ramon Villarreal
UCSC Baron Egaran
UCSC Kirsten De Guzman
UCSC Cesar Gerardo Hernandez Espinoza
UCSC Shayna Das
UCSC Naomi Jimenez
UCSC Jessica Zhen
UCSC Milana Janabayeva
UCSC Kailey Manzo
UCSC Ruben Camarena
UCSC Salvador Zavala
UCSC Angela Jimenez
UCSC Anthony Furman
UCSC Maya Diaz
UCSC Tommy Vu
UCSC Kai Sarti Guerrero
UCSC Katherine Velasquez
UCSC Archisha Akinchan

UCSC Tselha Khando
UCSC Cameron Kelly
UCSC Maggie Spalding
UCSC Vivian Johnson
UCSC Bella Velasquez
UCSC Angel Villasenor
UCSC Mackenzie Hespelt
UCSC Charles Lesser
UCSC Jasmin Torres
UCSC Max Mondragon
UCSC Emma Kayne
UCSC Kartikeya Kumaria
UCSC Trey Guzman
UCSC Kaiden Compton
UCSC Fatima Alvarado
UCSC Katrina Bui
UCSC Sahil Ghatora
UCSC Jimena Natera
UCSC Abril Saldivar
UCSC Zoe Dufner
UCSC Trevor Keller
UCSC Sean Lydon
UCSC Nathasya Hardijanto
UCSC Hyab Isayas
UCSC Rune Norderhaug
UCSC Consuelo Mendoza
UCSC Vishal Sajeev
UCSC Caeleb Cooley
UCSC Abel Garcia
UCSC Carly Iversen
UCSC Quan Doan
UCSC Isaac Blanco
UCSC Ethan Huynh
UCSC Jasmine Chau
UCSC Sam Poulton
UCSC Maxwell Guerrero
UCSC Ginger Williamson
UCSC Josephine Pottier
UCSC Rachel Wright
UCSC Christopher Kiess

CALPIRG

Students

UCSC Kai Westergaard
UCSC Sophie Zenn
UCSC Nyx Ford
UCSC Ella Montalbo
UCSC Cesar Cuevas
UCSC Atticus Drake
UCSC Odalys Martinez
UCSC Shreya Sil
UCSC Ava Kuhn
UCSC Britney Johnson
UCSC Annamarie Chavez
UCSC Vincent Chau
UCSC Jayla Ducre
UCSC Shivank Virdi
UCSC Mckenna Kolarik
UCSC Arnav Jaykumar
UCSC Sienna Williams
UCSC Victoria Vallin
UCSC Kaden Calder
UCSC Manuel Vasquez
UCSC Allison Labucay
UCSC Mauricio Sierra
UCSC Aneesha Sharma
UCSC Michael Lieu
UCSC Stella Totland
UCSC Jacqie Gordon
UCSC Alejandra Huizar
UCSC Nareck Havluciyen
UCSC Videh Jain
UCSC Valeria Navarro
UCSC King Barretto
UCSC Madison Silva
UCSC Alan Beltran
UCSC Emilio Mendoza
UCSC Toranosuke Matsuda
UCSC Jessica Davis
UCSC Averey Conklin
UCSC Karissa McDowell
UCSC Evan Evans
UCSC Zaira Gonzalez

UCSC Tyler Nagaguchi
UCSC Gianna Roza
UCSC Rachel Benavento
UCSC Cesar Sanchez Padilla
UCSC Vinoth Gopikrishnan
UCSC Lucas Peterson
UCSC Ezra Hurst
UCSC Aylien Garcia
UCSC Melanie Hernandez
UCSC Sierra Nelson
UCSC Roger Aguilar
UCSC Kaysie Perez
UCSC Andrea Vazquez
UCSC Kevin Leach
UCSC Roisin McElarney
UCSC Laira Sequeida
UCSC Delayne Martin
UCSC Emily Swint
UCSC Chia-en Chiang
UCSC Ani Villalba
UCSC Navaneeth Dontuboyina
UCSC Tarun Yendrapati
UCSC Kiara Amaya
UCSC Estefany Morales Duarte
UCSC Pacific Porter
UCSC Paisley Porter
UCSC Enzo Sapojnikoff
UCSC Alexis Raymundo
UCSC Shayda Roshdieh
UCSC Jack Powell
UCSC Jonas Nykamp
UCSC Animesh Andhare
UCSC Madison Enochs
UCSC Montana Sanchez
UCSC Lokesh Kodam
UCSC Noah Sherod
UCSC Angelo Franso
UCSC Ella Aquilino
UCSC Kennedy Thomas
UCSC Aidan Thomaes

CALPIRG

Students

UCSC Melody Stanger
UCSC Josephine Prendergast
UCSC Jackson Gamble
UCSC Josue Aguilar Mejia
UCSC Bennett Sherman
UCSC Anna Mauer
UCSC Madeline Ramsdell
UCSC Trianna Jordan
UCSC Charlise Gonzalez
UCSC Ashton Adams
UCSC Claire Rite
UCSC Dayra Ruiz Corrales
UCSC Avery Page
UCSC Brooke Moorhead
UCSC Jonas Nyramp
UCSC Monica Ruiz
UCSC Jacob Montiel
UCSC Melody Williams
UCSC Katherine Karanicolas
UCSC Arleth Lobato
UCSC Celeste Smith
UCSC Jared Nussbaum
UCSC Saira Hamid
UCSC Sophia Coffing
UCSC Reagan Shonkwiler
UCSC Julia Aldaz
UCSC Richard Duarte
UCSC Isaiah Castro
UCSC April Ibarra
UCSC Erin Lee
UCSC Clint Xavier
UCSC Valerie Yelluas
UCSC Michaela Marion
UCSC Lea Schott
UCSC Shawn Mechery
UCSC Davi Goldman
UCSC Martha Martin
UCSC Ruby Smylie
UCSC Anna Fedorova
UCSC Carli Jensen

UCSC Paola Embarcadero
UCSC Jimena Alcantar
UCSC Isabel Choi
UCSC Joel Lee
UCSC Sunny Gong
UCSC Stephanie Morrish
UCSC Sathya Kumaraguru
UCSC Helen Yao
UCSC Jonatan Shatzmiller
UCSC Grayson Schabert
UCSC Kai Skoloff
UCSC Luke Gerthoffer
UCSC Gongjue Sun
UCSC Jiya Sawarkar
UCSC Tarun Chandra Nagaraju
UCSC Avery Sheu
UCSC MJ Fernandes
UCSC Olivia Zuni Ruth
UCSC Beth Macdougall
UCSC Joleen Ruiz
UCSC Jackie Sanchez
UCSC Christina Panoff
UCSC Rithychey Yun
UCSC Bryan Badway
UCSC David Caamano
UCSC Kushagra Paliwal
UCSC Bela Tanner
UCSC Sebastian Guerra
UCSC Irving Morelos
UCSC Pranav Mulakala
UCSC Julia Demopoulos
UCSC Rebekah Westgate
UCSC Saleh Khan
UCSC Alex Aguilar
UCSC Diego Gutierrez
UCSC Michael Tobin
UCSC Alexander Freeman
UCSC Gabriel Flamerich
UCSC Mia Lopez
UCSC Rachel Tanis

CALPIRG

Students

UCSC Madison Navarro
UCSC Dale Clark
UCSC Joceline Ortega-Garcia
UCSC Joseph Coulson
UCSC Anthony Monday
UCSC Enrique Paz Gonzalez
UCSC Nicolas Vasquez-Ochoa
UCSC Pihu Sharma
UCSC Edgar Robles
UCSC Ella Lehavi
UCSC William Safranek
UCSC Natalya Bautista
UCSC Alexander Kohr
UCSC Maraea Hicks
UCSC Michael Arroyo
UCSC Sameem Wani
UCSC Marisela Puentes
UCSC Mateo Frey
UCSC Margo Melgoza
UCSC Jack Mason
UCSC Philip Chien
UCSC Aidan Ion
UCSC Madeline Trilling
UCSC Sofi Paulk
UCSC Ryder Johnson
UCSC Shelby McCleary
UCSC Robin Harned
UCSC Emily Clayson
UCSC Skye Hammond
UCSC Iain Dow
UCSC Andres Ricardez
UCSC Aditya Kanteti
UCSC Celeste Barrett
UCSC Gabe Martinez
UCSC Kamalika De
UCSC Julian Swensen
UCSC Lou Acevedo
UCSC Jakob Ball
UCSC Audra Kinser
UCSC Alex Kanyuka

UCSC Ray Mojarro
UCSC Jocelyn Lee
UCSC Graciela Yopez
UCSC Alex Logan
UCSC Tabitha Lopez
UCSC Alexa Garcia
UCSC Luke Hames
UCSC Akhil Gunasekaran
UCSC Ximena Rendon
UCSC Nolan Koehler
UCSC Darren Su
UCSC Steven Gerrick
UCSC Scarlett Alcalaide
UCSC Andy Chen
UCSC Cyra Baradaran-Bybee
UCSC Madison Montoya
UCSC Elina Murillo
UCSC Manav Choudhary
UCSC Angela Navarro
UCSC Alex Qian
UCSC Sergio Campos
UCSC Dylan Brewer-Fong
UCSC Sebastian Letamendi
UCSC Angelina Bueno
UCSC Owen Williams
UCSC Elias Alvarez
UCSC Cam Sadri
UCSC Manvir Sohi
UCSC Peerless Morgan
UCSC Em Ogbemor
UCSC Christopher Valladares
UCSC Sidney Opiyo
UCSC Sedona Berg
UCSC Reegan Evert
UCSC Joshua Weitzel
UCSC Emmett Cullinun
UCSC Grace Triantafyllos
UCSC Griffin Petersen
UCSC Grecia Ramirez
UCSC Jerica Libut

CALPIRG

Students

UCSC Daniel Quintanar
UCSC Rubí Arana
UCSC Benjamin Cole-Calderon
UCSC Aalia Hussain
UCSC River Stiles
UCSC Malin Limaj
UCSC Addison Huynh
UCSC Nate Malone
UCSC Leigh Horvath
UCSC Caitlin Swolgaard
UCSC Finn Giometti
UCSC Eli Chen
UCSC Alysha Schjelderup
UCSC Beau Grover
UCSC Ian MacKay
UCSC Lizeth Perez
UCSC Gregory Souza
UCSC Angela Wang
UCSC Sanjay Singh
UCSC Mason Grigas
UCSC Herb Cyde
UCSC Sophie Slusher
UCSC Tristan Liggett
UCSC Cole Flashner
UCSC Estelle Poderoso
UCSC Nayeli Loera
UCSC Tiffany Robles
UCSC Nora Ligotti
UCSC Joseph Cortez
UCSC Angel Yopez-Alanis
UCSC Zareli Franco
UCSC Reuben Chavez
UCSC Madison Santana
UCSC Alejandra Mendez
UCSC Daniel Aliyev
UCSC Malia Chhay
UCSC Connor Knowles
UCSC Marcus Jian
UCSC Robyn Vasquez
UCSC Jose Lombero

UCSC Melody Bernhoft
UCSC Evelyn Cooper
UCSC Sunny Gong
UCSC Ginger Arviso
UCSC Amia Taylor
UCSC Marco Padilla
UCSC Shrinithi Sathiyaseelan
UCSC Laurel Ramsdell
UCSC Hailey Arriola
UCSC Chloe Philippart
UCSC Julian Casselberry
UCSC Nina Cvillink
UCSC Alma Leonor
UCSC Raquel Mascol
UCSC Kevin Arceo
UCSC Maxilien Azumi
UCSC Nora Manzo
UCSC Ava Hardy
UCSC Kezia Frager
UCSC Rowan Willen
UCSC Simran Titan
UCSC Anya Knoepp
UCSC Angela Chan
UCSC Jessica Gonzalez Montiel
UCSC Ely Garcia
UCSC Gretchen Berndt
UCSC Smrithi Srinivasan
UCSC Justine Katz
UCSC Maya Walter
UCSC Aamir Asadi
UCSC Rylynn Shackelford
UCSC Varia Kniazhevich
UCSC Myles Williams
UCSC Lila Braff
UCSC Scarlett Kerr
UCSC Megan McElderry
UCSC Malcolm Madrone
UCSC Mayra Gutierrez
UCSC Maya Zee
UCSC Amaya Kernell

CALPIRG

Students

UCSC Davoud Brame
UCSC Ryan Chou
UCSC Milati Jomantara
UCSC Kenneth Vuong
UCSC Harris Husain
UCSC Dane Pearson
UCSC Sanai Frazier Kershaw
UCSC Sebastian Castellanos
UCSC Ashely Ito
UCSC Mia Snyder
UCSC Aracely Alva
UCSC Karthik Chaparala
UCSC Justin Diaz
UCSC Justin Fogo
UCSC Soraya De Leon
UCSC Franchesca Boongaling
UCSC Ryder Green
UCSC Jules Kloner
UCSC Alejandro Madrigal
UCSC Cecilia Butt
UCSC Sayre Hackworth
UCSC Kimberly Ovrid
UCSC Hannah Collison
UCSC Fiona Lee
UCSC Fui Shojima
UCSC Mathias Irwin
UCSC Ethan Kuhlken
UCSC Emily Gurzhi
UCSC Eva Stuewe
UCSC Daniel Arias
UCSC Aya Hubbard Cree
UCSC Alvin Mark
UCSC Frances Mccannel
UCSC Lucy Jensen
UCSC Kaiya Grubb
UCSC Kevin Liu
UCSC Blake Rahill
UCSC Garrett Lugmair
UCSC Arin Waza
UCSC Leana Godoy

UCSC Jady Diaz
UCSC Christian Dongon
UCSC Jonathan Parial
UCSC Kaya Yildirim
UCSC Danie Benard
UCSC Rikin Ladwa
UCSC Angelique Flood
UCSC Reegan Leon
UCSC Samantha Zavala
UCSC Katelyn Miller
UCSC Jonathan Latief
UCSC Lia Papador
UCSC Melissa Linares
UCSC Semiera Jones
UCSC Pete Barajas
UCSC Maggie McEachen
UCSC Quinlan Ulrich
UCSC Kate Heppell
UCSC Dom Brown
UCSC Violet Kommers
UCSC Aidan Moore
UCSC Dina Jovin
UCSC Kate Chernykh
UCSC Seleonalela Hunter - Selesitino
UCSC Jonah Henry
UCSC Chad Linke
UCSC Cameron Dew
UCSC Georgina Francis
UCSC Aashka Shah
UCSC AJ O'Malley
UCSC Toros Pinar
UCSC Katherine Saelee
UCSC Tanvi Dinaharan
UCSC Grace Magno
UCSC Sienna Weinstein
UCSC Brooke Bednar
UCSC Ivan Jaramillo
UCSC Naomi Mhamunkar
UCSC Colin Falkner
UCSC Isabella Videla

CALPIRG

Students

UCSC Sarah Goosen
UCSC Kayla Gonzalez
UCSC Angeles Aguilar Perez
UCSC Chaniel Sylvester
UCSC Hannah Runteria
UCSC Enrique Oliver
UCSC Ciara Bargas
UCSC Luke Kolesnikow
UCSC Luke Krstic
UCSC Fia McCord
UCSC Scarlett Basile
UCSC Olivia Salazar
UCSC William Zhang
UCSC Jose Hinogosa
UCSC Hadar Armony
UCSC Angelina Cheng
UCSC Nora Manzo
UCSC Ginger Helmer
UCSC Riley Fike
UCSC Maggie Downs
UCSC Daniel Aguilar
UCSC Halim Khodayari
UCSC Scott Stalnakev
UCSC Amanda Roberts
UCSC Connor McSorley
UCSC Kasandra Gonzalez
UCSC Varia Kniazhevich
UCSC Senay Araya
UCSC Andrew Vavrunek
UCSC Juliana Furio
UCSC Abbey Worley
UCSC Camila Toscano
UCSC Shlok Powar
UCSC Escher Lapre
UCSC Gerardo Segovia
UCSC Eduardo Lopez
UCSC Ella Hoyt
UCSC Olivia Hendrix
UCSC Siddhadh Mohanty
UCSC Adeline Basile

UCSC Montse Perez
UCSC Praamesh Sva
UCSC Alexa Gomez
UCSC Agustin Aguilar Garcia
UCSC Shubham Pruthi
UCSC Lohith Maddali
UCSC Cristian Arroyo
UCSC Eddie Ramirez
UCSC Roshali Ghosh
UCSC Navya Gulati
UCSC Abhishek
UCSC Emily Hernandez
UCSC Diana Castaredy
UCSC Donovan Nunez
UCSC Gianna Moore
UCSC Reya Nichols
UCSC Alex Quintanar
UCSC Brandon Pang
UCSC Nadia Steffan
UCSC Alfie Almario
UCSC Kaleb Hall
UCSC Iman Schaefer
UCSC Ashley Colindres
UCSC Daniel Aliyer
UCSC Kenneth Remillard
UCSC Mandy Zhu
UCSC Damien Guyrha
UCSC Madeline Puente
UCSC Taylor Cunningham
UCSC Milani Urbina
UCSC Viviana Perez
UCSC Jai'ari Wren
UCSC Nico Guilfoile
UCSC Erika Skylling
UCSC Devika Gowrabthuni
UCSC Makana Crannell
UCSC Emma Eskelin
UCSC Corina Rincon
UCSC Jennifer Roldan
UCSC Nikhil Pendse

CALPIRG

Students

UCSC Marianas Fernandez
UCSC Mikayla Shenkel
UCSC Mallika Hegde
UCSC Jael Fernandez
UCSC Mar Cisneros
UCSC Rolce Fernandez
UCSC Nancy
UCSC Samantha Beatty
UCSC Zachary Ginn
UCSC Nadia
UCSC Marley DeHorn
UCSC Alekhya Palepu
UCSC Badr Abanumay
UCSC Izzy Fiy
UCSC Hale Elamine
UCSC Iain Van Kleeck
UCSC Michael Carrilla
UCSC Denise Gomez
UCSC Christina Spencer
UCSC Enrique Paz Gonzalez
UCSC Akshat Sharma
UCSC Sienna Goetz
UCSC Zoe Wyckoff
UCSC Vance Byer
UCSC Claire Galbo
UCSC Olivia Dairy
UCSC Jericho Tang
UCSC Wesley Abrams
UCSC Julia Wanlin
UCSC Elizabeth Garcia
UCSC Augustin Aguilar Garcia
UCSC Vincent Ngo
UCSC Harsh Ranjan
UCSC Hannah Stamp
UCSC Sofia Lara
UCSC Sloane Harris
UCSC Jianan Zhang
UCSC Melody Lumos
UCSC Caitlin Gloster
UCSC Katelyn Zhang

UCSC Kim Vachoz
UCSC Richard Flintham
UCSC Chantal Webber
UCSC Jose Ruano
UCSC Arthur Webber Flintham
UCSC Hannah Magee
UCSC Bohdan Hughes
UCSC Iris Khatra
UCSC Jonah Ryan
UCSC April Zilber
UCSC Peyton Stringer
UCSC Hannah Benveniste
UCSC Mia Gold Collins
UCSC Colin Posat
UCSC Emily Reigh
UCSC Diego Carranco
UCSC Jacob Gillbert
UCSC Amanda Archer
UCSC Nancy Ortiz
UCSC Roxanna Villalobos
UCSC Ryan Paragas
UCSC Nigel Ruz

CALPIRG

Students

UC Santa Barbara Students

UCSB Viviana Hutton
UCSB Ashley Lewis
UCSB Amelia Dektor
UCSB Tracy Bui
UCSB Claudia Canfield
UCSB Delphi Davaros
UCSB Janeane Llopart
UCSB Michelle Goziker
UCSB Makaela Wells
UCSB Tianle Pang
UCSB Alyssa Bindra
UCSB Haley Lakritz
UCSB Gabriela Ochoa Medeiros
UCSB Elijah Chuc
UCSB Alex Kim
UCSB Eric Bennett-Sines
UCSB Yaneli Castellon
UCSB Arman Taracoli
UCSB Arianna Chen
UCSB Alexandra Patton
UCSB Mira Langin
UCSB Nate Infanger
UCSB Esteban Martinez
UCSB Alejandro Franco
UCSB Miguel Cavala
UCSB Sierra Steele
UCSB Vincenzo Puccio
UCSB Erika McPhillips
UCSB Arianna Arellano
UCSB Anshi Arora
UCSB Elise Lopez
UCSB Charles Le
UCSB Desiree Pozos
UCSB Tom Misté
UCSB Isabella Moreno
UCSB Catherine Anaya
UCSB Francesco Lupinacci
UCSB Timothy Meng

UCSB Cindy Jiang
UCSB Elliana Jennings
UCSB Mirella Bueno
UCSB Angelica Barron
UCSB Simone Edwards
UCSB Swara Krishnamoorthi
UCSB Bryant Estrada
UCSB Brendan Lacaman
UCSB Katy Tseny
UCSB Ashlyn Strickland
UCSB Neo Harter
UCSB Amira Zulhazmi
UCSB Leah Sagi
UCSB Iveth Torres Garcia
UCSB Jade Gauriat
UCSB Genevieve Wallace
UCSB Daniela Mendoza Villa
UCSB Julia Katz
UCSB wra'Sani Rhodie
UCSB Livia Herman
UCSB Eden Wright
UCSB Matt Funck
UCSB Jay Ramos
UCSB Sasha Gardee
UCSB Sebastian Maldonado
UCSB Timothy Mesa
UCSB Mike Petrus
UCSB Antoine Merlo
UCSB Ximena Lopez
UCSB Cora Reese
UCSB Jewel Gates
UCSB Katarzyna Struve
UCSB Emma Gregory
UCSB Sophie Spencer
UCSB Ciaran Finnegan
UCSB Jailyn Colbert
UCSB Jordan Hatton
UCSB Lindsey Arellano
UCSB Karla Corriolo
UCSB Tony Tran

CALPIRG

Students

UCSB Josephine Macdonald
UCSB Pablo Gomez
UCSB Malt Bilge
UCSB Nahiyah Raidah
UCSB Marco Zaragoza
UCSB Nolan Nicassio
UCSB Lana Marshall
UCSB Phoebe Tunnell
UCSB Saleen Goylia
UCSB Macee Joyce
UCSB Isabella Rios
UCSB Jacobo Inciarte Valayre
UCSB Andria Posey
UCSB Sophia Paravato
UCSB Andrea Ramirez
UCSB Gisele Lusk
UCSB Catherine Arias
UCSB Mila Stoilora
UCSB Marco Antonio Zaragoza
UCSB Mariko Bronson
UCSB Harmilan Singh
UCSB Catherine Fang
UCSB Paige Thomburg
UCSB Justin Tumbag
UCSB Maddyx Pallodino
UCSB Aayushi Shah
UCSB Noellani Garcia
UCSB Madi Halstead
UCSB Sophia Paravato
UCSB Halley Bergeson
UCSB Seth W
UCSB Kennedy Owen
UCSB Jake Grendahl
UCSB Evelyn Song
UCSB Nadia Melendez
UCSB Dayna Garcia
UCSB Desiree Carrillo
UCSB Sophie Kiss
UCSB Karin Kawakami
UCSB Vivian Huang

UCSB Zurisaray Segundo
UCSB Ada Albright
UCSB Isabella Buelna
UCSB Maya Rivera
UCSB Greg Icoutires
UCSB Myla Igoe
UCSB Jimmy Mattaden
UCSB Muskaan Schievink
UCSB Malea Braswell
UCSB Amaya Davis
UCSB Audrey Juneman
UCSB Katherine Jacobson
UCSB Abril Carpio
UCSB Selene Cervantes
UCSB Natalie Richards
UCSB Paulina Guijosa
UCSB Kavya Thiagarajan
UCSB Zohar Dvory
UCSB Carmen Kang
UCSB Stephanie Coghlan
UCSB Maya Lee
UCSB Claire Moody
UCSB Anthony
UCSB Fernanda Perez
UCSB Olivia Jonsson
UCSB Yasmin Henderson
UCSB Diana Ruiz
UCSB Margaret O'Brien
UCSB Cierra Lujan
UCSB Kate Saxea
UCSB Nathan Nguyen
UCSB Jin Kim
UCSB Kathryn Chan
UCSB Arielle Volfre Zaydenman
UCSB Vanessa Castro
UCSB Emilie Carrere
UCSB Voang? Dang
UCSB Annika Damstedt
UCSB Nikki Dorostkar
UCSB Diego Navarro

CALPIRG

Students

UCSB Kayla Matthies
UCSB Mila Gradillas
UCSB Josianne Absi
UCSB Parker Barandon
UCSB Mone Duronslet
UCSB Abigail Bayless
UCSB Ivy Munguia Alejo
UCSB Serina Munoz
UCSB Charlotte Squire
UCSB Edward Tu
UCSB Benjamin Pliu
UCSB Mala Methai
UCSB Abraham Reyes
UCSB Leah Edmonds
UCSB Alvino Lopez
UCSB Lily Kazemi
UCSB Abigail Kim
UCSB Jason Jim
UCSB Gypsy Tranquilla
UCSB Liz Rioz
UCSB Vanessa Waggener
UCSB Audrey Edel
UCSB Jacob Rios
UCSB Charlie Miranda-Nevarez
UCSB Ruthie McElfresh
UCSB Dand Chang
UCSB Audrey Hunter
UCSB Georgia Clark
UCSB Luke McGuire
UCSB Maddox Le
UCSB Alexis Clubb
UCSB Margaret Levitt
UCSB Miriam Soto
UCSB Celine Yaghoubi
UCSB Bethany Sierra
UCSB Syehi Williams
UCSB Kitt Fricke
UCSB Kristopher Rangel-Oliros
UCSB Aaron Edwards
UCSB Lillie Benitez

UCSB Berndan Laramoin
UCSB Aditii Srihivasan
UCSB Hayden Dagman
UCSB Sammy Ali
UCSB Callahan Morgan
UCSB Mohammed Rohman
UCSB Hope Fu
UCSB Gabby Assiff
UCSB Alue Otiura
UCSB Elizabeth Shelton
UCSB Katie Le
UCSB Linyi Chen
UCSB Elke Farrow
UCSB Drew Haber
UCSB Sophie Orwig
UCSB Mia Casas
UCSB Jason Chen
UCSB Zay Chonnad
UCSB Cabrilla Wiereck
UCSB Tyler Wiederanders
UCSB Iris Jenssen
UCSB Ava Glusal
UCSB Phillip Phi
UCSB Aidan Webb
UCSB Katrina Funk
UCSB Kiarra Stewart
UCSB Jennifer Dominguez
UCSB Dylan Eifler
UCSB Helen Morales
UCSB Julianne Long
UCSB Melanie Torres
UCSB Enya Larsen
UCSB Sophia Weise
UCSB Sonja Buran
UCSB Fernanda Perez
UCSB Victoria Such
UCSB Lilly Bennett
UCSB Claire Mussell
UCSB Jingxuan Gu
UCSB Lua McKnight

CALPIRG

Students

UCSB Khalid Safie
UCSB Phoebe Mitchem
UCSB Kira Valles-Knoll
UCSB Wilson Lee
UCSB Shea Ellingson
UCSB Tina Thach
UCSB Calvin Kissell
UCSB Isrrael Butanda
UCSB Paris Campbell
UCSB Maaz Khan
UCSB Gabriela Davis
UCSB Kaelyn Kikere
UCSB Austin Gessini
UCSB Liam Gilson
UCSB Kaylynn Gray
UCSB Bram McLaughlin
UCSB Isabel Hicks
UCSB Cila Nans
UCSB Hadley Simmons
UCSB Wyatt Erickson
UCSB Hannah Olivas
UCSB Lily Mary Kupferschmid
UCSB Sarasvati Satyanarayana
UCSB Amos Alas
UCSB Anna Moncrieff
UCSB Bryan Yan
UCSB Leah Yoffe
UCSB Katelyn Varez
UCSB Paula Casares-Iglesias
UCSB Madeline Marentelte
UCSB Emily Percifield
UCSB Tate Poster
UCSB Elise LaFreniere
UCSB Ava Maudal
UCSB Anna Olson
UCSB Laila Shahida
UCSB Liam Wilder
UCSB Jouke Nabanzj
UCSB Gema Toledo
UCSB Mya Aldrich

UCSB Sophia Tran
UCSB Gibson Lopez de Huehls
UCSB Aliana Hermann-Campana
UCSB Michael Any
UCSB Andrea Crafoord
UCSB Curran Seth
UCSB Zachary Sears
UCSB Haixin Lan
UCSB Vilma Burman
UCSB James Boesen
UCSB Madeline Faughn
UCSB Ava Tolab
UCSB Payton Parker
UCSB Isabella Ferraro
UCSB Vic Pei
UCSB Kaylah Naguiat
UCSB Angela Retamoza
UCSB Michelle Sun
UCSB Jessica Tran
UCSB Avery Simmons
UCSB Sarah Walker
UCSB Kaitlin Carmona
UCSB Medeline Crafton
UCSB Eva Grunburg
UCSB Virginia Haynes
UCSB Ruby Scott
UCSB Alliron Noble
UCSB Leila Jerge
UCSB Jacob Ngai
UCSB Kaylene Lawing
UCSB Amit Goldberg
UCSB Sophia Long
UCSB Aliza Tyndale
UCSB Natalia Murillo
UCSB Sophie Girard
UCSB Carter Zimmerman
UCSB Nick Grove
UCSB Adrianna Martinez
UCSB Gytok Popolik
UCSB Daniel Garcia

CALPIRG

Students

UCSB Dominick Lopez
UCSB Moises Guerrero
UCSB Brandon Ordenez
UCSB Diego Buntz
UCSB Juan Gonzalez
UCSB Sofia Smith
UCSB Kendall Spieler
UCSB Avery Wallace
UCSB Sithu Madigapola
UCSB Annika van der Wagt
UCSB Olivia Arreola
UCSB Lila Werland
UCSB Mia Trapse
UCSB Liv Zou
UCSB Paulila Prak
UCSB Kylie Rivera
UCSB Heidi Wag
UCSB Natalie Ohanes
UCSB Rachel Li
UCSB Finn Griffiths
UCSB Miryam Organes
UCSB Melany Veliz
UCSB Beatriz Salinas
UCSB Michael Manu
UCSB Jaslynn Rodriguez
UCSB Ava Amin
UCSB Mia Arias
UCSB Anya Gadkari
UCSB Hailey Ronen
UCSB Zarah Zavala
UCSB Danila Gilinsley
UCSB Allison Neuman
UCSB Sinead Estrada
UCSB Hunter Maher
UCSB Shunji Shimoyoshi
UCSB Ari Black
UCSB Marissa Romero
UCSB Frida Jackson
UCSB Kaiya Leonard
UCSB Katie Seidel

UCSB Trinity Lamb
UCSB Natalia Ramirez
UCSB Kyra Geruldsen
UCSB Rachel Morrow
UCSB Madi Pearce
UCSB Emilie Carbine
UCSB Niya Jain
UCSB Marina Pedemonte
UCSB Nathan Zhang
UCSB Bink Sauison
UCSB Markus Ramirez
UCSB Alison Flacks
UCSB Simone Silehon
UCSB Blare Payette
UCSB Sonia Jekle
UCSB Katie Mumpower
UCSB Taichi Tateishi
UCSB Callie Yiu
UCSB Go Inamura
UCSB Oscar Vicente
UCSB Mia Arias
UCSB Ben Firros
UCSB Alysa Hernandez
UCSB Annie Nguyen
UCSB Rowan Olson
UCSB Jacob Salmeron
UCSB Lilly Hartwick
UCSB Katharine Chi
UCSB Emily Campos
UCSB Madeline Crafton
UCSB Kennedy Owen
UCSB Julianna Gomez
UCSB Amelya Bavudin
UCSB Loanly Dang
UCSB Serenity Orbe
UCSB Trisha Prasad
UCSB Ava Bradford
UCSB Sarah So
UCSB Sumunaa Gnanashanmugam
UCSB Aisha Aranda

CALPIRG

Students

UCSB Stephen Bond
UCSB Hector Lyko
UCSB Tracy Lin
UCSB Jenna Mead
UCSB Cian Johnsen
UCSB Aedan Cataldo
UCSB Lou
UCSB Ellie Vinogradsky
UCSB Nicole Turcios
UCSB Sarah Raffee
UCSB Gabriela Smith
UCSB Madeline Mdrd Chavez
UCSB Lorena Borges
UCSB Audrey Zahn
UCSB Amber Miranda
UCSB Hassan Hendrix
UCSB Lily Jepson
UCSB Ariana Coria
UCSB Elizabeth Clark
UCSB Catherine Hernandez
UCSB Katya Davis
UCSB Grace Ladenson
UCSB Justyn Escobar
UCSB Isa Merideth
UCSB Finn Weiss
UCSB Iris Camahan
UCSB Hadley Peterson
UCSB Meuan Zhao
UCSB Lexi Eller
UCSB London Gilbert
UCSB Ellie Reimer
UCSB Mikayla Sooter
UCSB Diana Sanchez
UCSB Kevin Perow
UCSB Isabel Peters
UCSB Shane Duisenberg
UCSB Kaitlyn Murphy
UCSB Brynna Neves
UCSB Aneli Cachu
UCSB Raymond Vargas

UCSB Ryan Hezaway
UCSB Alex Ahlswede
UCSB Liya Zech
UCSB Faye Kakov
UCSB Ayden Craymer
UCSB Sarah Lorenz
UCSB Lauren Weisberg
UCSB Jonah Mason
UCSB taylor Berandes
UCSB Lylah Defibaugh
UCSB Rae Nalbantian
UCSB Amanda Mong
UCSB Timothy Hager
UCSB Lily Wozniak
UCSB Isabella Miller
UCSB Cheyenne Dyer
UCSB Marcello Chang
UCSB Owen Wright
UCSB Leeann Smith
UCSB Gabriella Roberts
UCSB Ellison Stark
UCSB Chelsea Yates
UCSB Isabela Alvarez
UCSB Elise LaFreniere
UCSB Estrella Alcaraz
UCSB Lily Kupferschmid
UCSB Russel Zhang
UCSB Georgia Matthews
UCSB Giovanni Ledoux
UCSB Cara McClure
UCSB Bryce Hurtado
UCSB Ximena Valle
UCSB Grace Bonham
UCSB Angel Alcala
UCSB Lukas Plotts
UCSB Tale-Kale Moreno
UCSB Helen Locula Ramirez
UCSB Paige Woods
UCSB Karis Kotschnig
UCSB Niko Armeniakos

CALPIRG

Students

UCSB Isa Merideth
UCSB Brianna Morales
UCSB Bethany Rivera
UCSB Christine Vlick
UCSB Zoe Tam
UCSB Nina Lacy
UCSB Charizma Linares
UCSB Joseph Mendez
UCSB Chloe Devere
UCSB Nicolette Reese
UCSB Anthony Romero
UCSB Violet Krisuls
UCSB Ben Dermer
UCSB Estefani Garcia
UCSB Gabriella Hoeberichts
UCSB Maya Guiza
UCSB Sydney Fourby
UCSB Andreas Zwan
UCSB Sarah Seislove
UCSB Ximena Garcia
UCSB Pricilla Almendarez
UCSB Michael Cruz
UCSB America Sierra
UCSB Kelly Wang
UCSB Cheyenne Dyer
UCSB Jaidy Pearson
UCSB Madeira Capell
UCSB Allan Maldonado
UCSB Jessie Liang
UCSB Lana Gonzalez
UCSB Sally Shapiro
UCSB Samantha Ruiz
UCSB Cira Teeters
UCSB Joseph Peir
UCSB Emily Campos
UCSB Flora Goep
UCSB Lily Kazemi
UCSB Lily Strange
UCSB Dalton Bassler-Haynes
UCSB Madelaiwe Province

UCSB Dania Sanchez
UCSB Iveth Torres
UCSB Faith Pickett
UCSB Cassandra Ruark
UCSB Jocelyn Reyes
UCSB Charlotte Wang
UCSB Erica Martinez
UCSB Brenda Teranperez
UCSB Tracy Morales McMullen
UCSB Chad Gibson
UCSB Sophia Atlas
UCSB Vivian Bui
UCSB Leah Slnka
UCSB Kaya Cuellar
UCSB Anneliese Stephens
UCSB Melva Castellanos
UCSB Jared Flores
UCSB Kripal Pantha
UCSB Jonathan Tejeda
UCSB Danielle Delena
UCSB Eli Hester
UCSB Marley Hatkins
UCSB Anton Berge-wells
UCSB Kennedy Williams
UCSB Aaralyn Johnston
UCSB Jung Ah Lim
UCSB Laura Brown
UCSB Lior Kishinevsky
UCSB Mia Bento
UCSB Priscilla Rayon
UCSB Nadia Melendez
UCSB Paise Clayton
UCSB Maya Kaye
UCSB Evan Lin
UCSB Griffin Pieretti
UCSB Tiffany Lan
UCSB Audrey Agrams
UCSB Joseph Cancio
UCSB Elora Parises
UCSB Juan Araujo

CALPIRG

Students

UCSB Brendan Lacaman
UCSB Brendan Lacaman
UCSB Ayden Hidalgo
UCSB Christian Chan
UCSB Evelyn Engebretson
UCSB Jimena Solorio
UCSB Ninus Elya
UCSB Amit Millstein
UCSB Carlo Lapayese-Calderon
UCSB Andi Contreras
UCSB Hannah Wobrock
UCSB Danica Ward
UCSB Dylan Natcher
UCSB Fateh Grewal
UCSB Leah Therrien
UCSB Agustin Fitipaldi
UCSB Andrea Moreno
UCSB Nicole Alvarado
UCSB Angelina Cravey-Taylor
UCSB Jenna Ring
UCSB Aden Garcia
UCSB Andressabri Gonzales
UCSB Yuhei Ono
UCSB Ari Linder
UCSB Ashley Dickel
UCSB Nicole Jarvis
UCSB Sofia Romo
UCSB Lila Nabis
UCSB Joonseog Si
UCSB Mai Dang
UCSB Alejandro Hernandez
UCSB Reese Raygoza
UCSB Ella Graban
UCSB Roisin Casey
UCSB Baret Kalinke
UCSB Laila Horst
UCSB Raymond Vargas
UCSB Vincent Basle
UCSB Emma Orrick
UCSB Grethell Davalos

UCSB Leslie Rodriguez
UCSB Kailey Tapia
UCSB Natalie Parker
UCSB Isabel Owen
UCSB Shiloh Read
UCSB Leah Cierzan
UCSB Anusha Srinivas
UCSB Sofia Levin
UCSB Aditya Tiwari
UCSB Ben Carlson
UCSB Calvin Kissell
UCSB Kimberly Gomez Diaz
UCSB Emma Franco
UCSB Rosa Jacinto
UCSB Ashley Medina
UCSB Paulina Le
UCSB Julia Zhou
UCSB Alan Martinez
UCSB Melanie Fernandez
UCSB Junnan Dai
UCSB Joshua Charfauros
UCSB Jack Taylor
UCSB Joshua Tobi
UCSB Sofia Gonzalez
UCSB Carolyn Lu
UCSB Lor Azpeitia
UCSB Jeronimo Rabino
UCSB Siena Waldman
UCSB Chase Benson
UCSB Justin Wu
UCSB Emily Cohen
UCSB Marslina McCahey
UCSB Sam Cho
UCSB Kobe Gellman
UCSB Ruby Ikeler
UCSB Alexander Borgas
UCSB Joaquin Reeves
UCSB Luke Gaylord
UCSB Adella Brown
UCSB Jonas Myers

CALPIRG

Students

UCSB Sofie Olson
UCSB Rainer Teo Masera
UCSB Madison Resendez
UCSB Nelson Zhang
UCSB Nadine Peck
UCSB Trinity Tran
UCSB Arie Ogranovich
UCSB Harrison Porter
UCSB Zach Mann
UCSB Alyssa Howe
UCSB Anastasia Wang
UCSB Joana Thomas
UCSB Emin Aslan
UCSB Hyeju (Amy) Han
UCSB Bridget Weingart
UCSB Patricio Campos
UCSB Adam Van Voorhees
UCSB Kolbe Kissell
UCSB Alexia Ruiz
UCSB Lidia Mejia
UCSB Isabela Barragan
UCSB Samantha Fernandez
UCSB Olivia Hackworth
UCSB Gabriela Licea
UCSB Bella Bawarshi-Hurdis
UCSB Amelia Chen
UCSB Edgar Hernandez Mendoza
UCSB Mike Petrus
UCSB Mike Petrus
UCSB Braden Vern
UCSB Christopher Pinal
UCSB Max Lloyd-Stern
UCSB Can Basoglu
UCSB Austin Baum
UCSB Shyla Buckhouse
UCSB Alina Ramos
UCSB Betsy Perez
UCSB Francesca Hzaal
UCSB Janelle Elizondo
UCSB Natali Menendez

UCSB Hasvita Obulapuram
UCSB William Gan
UCSB Madeline Madrid Chavez
UCSB Sierra Wilson
UCSB Katherine Le
UCSB Amalia Motomura
UCSB Ekam Madra
UCSB Andrew Dunham
UCSB Sarah Walker
UCSB Maximo Perez
UCSB Emilio Ozemann
UCSB Isabella Farias
UCSB Eric Morgan
UCSB Kevin Lucio
UCSB Miranda Guzman-Shrake
UCSB Christopher Garcia
UCSB Christopher Garcia
UCSB Christopher Garcia
UCSB Alicia Rangel
UCSB Anna Moncrieff
UCSB Sarasvati Satyanarayana
UCSB Diego Ledezma Salvador
UCSB Caroline Muller
UCSB Sophia Grabher
UCSB Kiran Khaqan
UCSB Sophia Berger
UCSB Anna Rowe
UCSB Willow Shaffer
UCSB Olivia Washecka
UCSB Laura Ballard-Arellan
UCSB Yancy Matthew
UCSB Jameson D'Amico
UCSB Anusha Sood
UCSB Miles Hoang
UCSB Isa Soto
UCSB Sadie Pena
UCSB Koa Papandrew
UCSB Angelee Araujo
UCSB Jingyi Huang
UCSB Logan McClosky

CALPIRG

Students

UCSB McKay Harris
UCSB Xiaohui Wu
UCSB Lilly Bennett
UCSB Julia Gibbons
UCSB Cristela Cohen
UCSB Skyler Lee
UCSB Taylor Cusimano
UCSB Ernesto Lopez Arroyo
UCSB Alina Ashby
UCSB Timothy Hager
UCSB Chloe Norton
UCSB Lizbeth Moreno
UCSB Leo Harjanto
UCSB Nick DeFranchi
UCSB Nick DeFranchi
UCSB William Mccann
UCSB Oleksandra Nikanova
UCSB Estrella Cabrera
UCSB Emily Dinn
UCSB Sophia Aguilar
UCSB Gerianne Wong
UCSB Jewel Sutter
UCSB Augrim Hoysal
UCSB Mariah Vaiza
UCSB Josephine Yi
UCSB Genevieve Heal
UCSB Olivia Chen
UCSB Abigail Sainsbury
UCSB Justin Ealand
UCSB Ashley Corleto
UCSB Mina Nazari
UCSB Lucas Sun
UCSB Django Barnett
UCSB Dylan Pollard
UCSB Alex Ostergaard
UCSB Daniel Duggar
UCSB Madison Mohun
UCSB Francisco Duarte
UCSB Maya Indelicato
UCSB Yanie Apostol

UCSB Sofia Arias
UCSB Mackenzie Raffety
UCSB Gabriella Hogan
UCSB Aidan White
UCSB Kaleigha Ferguson
UCSB Taralynn Kang
UCSB Oleta Jamieson
UCSB Elias Veran
UCSB Stevens Ordanez
UCSB Naseabai Jahangard
UCSB Hassan Hendrix
UCSB Serenity Llorin
UCSB James Chong
UCSB Josue Olachea
UCSB Naia Smithley
UCSB Elliana Jennings
UCSB Avani Ryan
UCSB Shahar Segal
UCSB Manuel Ortiz
UCSB Isabella Brillantes
UCSB Emily Luna
UCSB Ashton Molendyk
UCSB Isabelle Alvarez
UCSB Derev Kalaygi
UCSB Kassandra Rodriguez
UCSB Alex Argov
UCSB Joelle Wesely
UCSB Lily Nunn
UCSB Anna Vayser
UCSB Laird Olsen
UCSB Matthew Etheridge
UCSB Julio Bermudez
UCSB Mauricio Garcia
UCSB Angela Velasquez
UCSB Jey Jerue
UCSB Finn Harlman
UCSB Christine Haynes
UCSB Justin Pendrey
UCSB Ann Dong
UCSB Masayo Maohii

CALPIRG

Students

UCSB Amy Nguyen
UCSB Adrian Gallardo
UCSB Irina Nguyen
UCSB Jasmin Viveros
UCSB Alex Ewing
UCSB Wiley Carver
UCSB Elliot Simandle
UCSB Roger Aldaco
UCSB Shea Ellingson
UCSB Trinity Pedroza
UCSB Kaiya Hayes
UCSB Faith Johnson
UCSB Jamall Brown
UCSB Hazel McIntosh
UCSB Julianna Alas-Castillo
UCSB Claire Tilley
UCSB Theo Prestwich
UCSB Josue Juarez Carreno
UCSB David Cheung
UCSB Kai Barker
UCSB Katelyn Saxen
UCSB Liam Gilson
UCSB Tazzy Imbabi
UCSB Riley Melton
UCSB Marie Ndulue
UCSB Ricardo Santana
UCSB Lauryn Cummins
UCSB Kylie Espinoza
UCSB Charles Kulick
UCSB Christina Li
UCSB Jackie Ramos
UCSB Juan Munoz
UCSB Griffin Soelberg
UCSB Sophie Serruya
UCSB Andrew Hobbs
UCSB Analaura Pizano Guzman
UCSB Ellie Berlin
UCSB Hailley Lyong
UCSB Owen Souza
UCSB Anish Ehowdary

UCSB Nesella Yashawsi Venkat
UCSB Mia Oqi
UCSB Sydney Sher
UCSB Jocelyn Aguilar
UCSB Ren Zdrall
UCSB Aubrey Gilman
UCSB Leripse Ruiz
UCSB Rushabh Taneja
UCSB Dora Ung
UCSB Meadows Stevens
UCSB Charlotte Thorton
UCSB Charles Faurot
UCSB Andersen Hoffmeyer
UCSB Yuxuan Li
UCSB Jayle Luu
UCSB Austin Gessini
UCSB Akhila Johny
UCSB Buauya Owiyal
UCSB Maria Ratu
UCSB Glanna Salazar
UCSB Itai Solomon
UCSB Lucas Alvarez
UCSB Catrina Sada
UCSB Benjamin Ammer
UCSB Lindamarie Herrera
UCSB Nina Padar
UCSB Brenda Delgado
UCSB Yaati Sureka
UCSB Indhu Chandra
UCSB Kaavya Saini
UCSB Sarah Canton
UCSB Alexander Romero
UCSB Paola Campos

CALPIRG

Students

UCLA Students

UCLA Alice Alvarez
UCLA Candy Arnold
UCLA Defne Tanyildiz
UCLA Desirel Plascencia
UCLA Emma Riedel
UCLA Julianne Khoury
UCLA Karla Martinez
UCLA Katy Nicholas
UCLA Mitch De Guzman
UCLA Monique Gomez
UCLA Natalia Hernandez
UCLA Neo Sola
UCLA Tianjiao Zhang
UCLA Alina Marinshar
UCLA Genelle Abella
UCLA Hatif Syed
UCLA Kevin Molkara
UCLA Noah Scheets
UCLA Srivatsan Balaji
UCLA Thuy Nguyen
UCLA Aneesa Holiday
UCLA Gabriel Schroer
UCLA Joanna Carcinas
UCLA Lainey Keefauver
UCLA Mustafa Agha
UCLA Sylvia Ansley
UCLA Colum Slattery
UCLA Joshua Villanova
UCLA Savannah Zhang
UCLA Aly Yang
UCLA Diandian Shi
UCLA Priya Ravi
UCLA Alejandra Flores
UCLA Ashanti Starks
UCLA Allison Kinsey
UCLA Arya Darvish
UCLA Camila Barajas
UCLA Eduardo Toscano

UCLA Kaydee Garcia
UCLA Sophie Zhou
UCLA Tiffany Arellano
UCLA Trinity Rivero
UCLA Anna Lopez
UCLA matt Samarghachian
UCLA Sascha Nikolai
UCLA Madison Fuji
UCLA Sofia Peters
UCLA Benjamin Moon
UCLA Coco Dobard
UCLA Jackson Bakey
UCLA Megan bushman
UCLA Nax Mendiola
UCLA Peter Hernandez
UCLA POaula Danemann soto
UCLA Rosalyn Sotelo
UCLA Mehetabel Frimpong
UCLA Noelle Kimotsuki
UCLA Risa Sun
UCLA Julissa Mendoza
UCLA elyssa tapia
UCLA Jasmine Aner
UCLA walker nelson
UCLA Caleb Uirkstis
UCLA Kira Sarriegui-Simon
UCLA Shea Townley
UCLA Christa Shibayama
UCLA Kaitlyn McKibben
UCLA Marie Zhang
UCLA Lucas Goulart
UCLA diamond exactlytramkim
UCLA Isabella Castillo
UCLA Abdoul Samad Bholat
UCLA Casey Seon
UCLA Leslie Nega Acosta
UCLA Maggie Benson
UCLA Maya Allen
UCLA Roza Papikyan
UCLA Keegan Boyes

CALPIRG

Students

UCLA Marielle Cruz
UCLA Maya Ceia
UCLA Albion Bodle
UCLA Samantha Miranda
UCLA Suhas yarra
UCLA Lily Rivas
UCLA Jacky Luo
UCLA Simone Horowitz
UCLA Meith Naularha
UCLA Yuqi Feng
UCLA kayla zanelli
UCLA Miguel Palma
UCLA William J Smith III
UCLA Woyu Wang
UCLA Gabrielle White
UCLA Jingjie Lin
UCLA Maya Gheewala
UCLA Isabelle Greunke
UCLA Mia Burzminski
UCLA Amy Chen
UCLA Yue Gu
UCLA Joy Jweid
UCLA Ryan Dam
UCLA Nicolas Lee
UCLA Shaolin Lee
UCLA Hudson Fox
UCLA Alex Clayton
UCLA claire reinke
UCLA Daisy Garcia
UCLA ella tierney
UCLA Jordyn Nishimara
UCLA katherine jobrumbaugh
UCLA Logan Giralt de Spelder
UCLA Vedant Janapaty
UCLA Viva Corless
UCLA Navreet Ghumman
UCLA Brett Berndt
UCLA Isabella Guerrero
UCLA Luke Schwuchow
UCLA Elena Griffiths

UCLA Gwenyth Nickolenko
UCLA Kanak Modi
UCLA Maximillian Bohannan
UCLA Sydney Olofe
UCLA Kristy Yfunn
UCLA Reshman Amin
UCLA Christopher Sinanian
UCLA Jaden Nguyen
UCLA Sofia Riaz
UCLA Isabella Guerra
UCLA michael jarcia
UCLA Alexander Hoffman
UCLA Britney Castanedacama
UCLA Hina Ricardo
UCLA Marcella Marcelino
UCLA Samantha Brown
UCLA Sharada Gopalakrishnan
UCLA Virgil Ortiz
UCLA Alyssa Caraenas
UCLA Charlie Schmidt
UCLA Lauren Hutchings
UCLA Satviki Chaturvedi
UCLA Tallis Arnold
UCLA Tyler Tautai
UCLA Andrew
UCLA Mingyu Lee
UCLA Mariam Saab
UCLA alix ospina
UCLA An-di Duong
UCLA Andrea Adams
UCLA ansley riddell
UCLA Carolyn Preston
UCLA david pilik
UCLA Grace Crabtree
UCLA greta gillmor
UCLA Haris Waleed Nadeem
UCLA India Bowles
UCLA Jesille Jackson
UCLA Jillian Capul
UCLA Joselyn nateras

CALPIRG

Students

UCLA keaton flynn
UCLA laura truong
UCLA Lin Yamamoto
UCLA Maribella Kase
UCLA Molly Gurland
UCLA Natasha Cosgrove
UCLA Roman Aguiree
UCLA ruby lopez
UCLA Ryan Lee
UCLA Sheraz Fayyaz
UCLA Soel Solis
UCLA Vicky Lin
UCLA victor kryshak
UCLA Vyas Koduvayur
UCLA Zhengwo Han
UCLA El Yang
UCLA Genavieve Berti
UCLA Tucker Park
UCLA Adina Givens
UCLA Alexandra Sanabria
UCLA Allyson Kang
UCLA Alondra Carrillo
UCLA Antonella Del Toro
UCLA Bella Witt
UCLA benjamin sperow
UCLA Brinn Wallim
UCLA Cathy Chuong
UCLA Chris Bailey
UCLA Crystal Mendoza
UCLA Emily Wiggins
UCLA Emma Ashworth
UCLA emmoni preciado
UCLA Fatima Muniz
UCLA Geonu Park
UCLA George Contreras
UCLA Giavanna Foster
UCLA Hannah Finkbeiner
UCLA Hazel Veteto
UCLA Isabella Reina
UCLA izaiah anaya

UCLA Jacqueline Ambriz
UCLA Jaiden Gengo
UCLA Jane Shohdy
UCLA jennifer garibay
UCLA Jocelyn Molina
UCLA Julianna Wolf
UCLA Kai Simonsen
UCLA Kate Kresser
UCLA Kenia Hidalgo
UCLA Lance Stroud
UCLA Lucia Yanez
UCLA Luke Graham
UCLA makenna grewal
UCLA Marbella Zelayu
UCLA Mario Sanchez
UCLA Mariya Stehnitska
UCLA mathew kc-jordan
UCLA Mayar Totounji
UCLA Megan Palmer
UCLA Meilin Huang
UCLA Mikaila Schmellenberg
UCLA Oliver Garcia
UCLA Raiki Nishida
UCLA Rebecca Robles Ramirez
UCLA Sabrina Robles
UCLA Yoojin Lee
UCLA Zion Paulino
UCLA Ana Martinez
UCLA Anette Magno
UCLA Douglas Vermeer
UCLA Dycan Mayhue
UCLA Elizabeth Shay
UCLA Emma Teng
UCLA Gary Voigt
UCLA Iris Wang
UCLA Iris Arias
UCLA Jaidyn McKinnie
UCLA Jasmin Portillo
UCLA Jimena Lora
UCLA Jonathan Choi

CALPIRG

Students

UCLA Kayla Fullerton
UCLA Lulu Sigouin
UCLA Oliver Lawrence
UCLA Petunia Rizo
UCLA Samuel Torres
UCLA Abhimanyu Borthakur
UCLA Alexander Clare
UCLA Ava Tam
UCLA Grace Shoemaker
UCLA Grace Driscoll
UCLA Hunter Akins
UCLA Jeronimo Martine
UCLA Karesly Corona
UCLA Kathleen Vo
UCLA Mariko Hashimoto
UCLA Max Mendoza
UCLA Mimi Xue
UCLA Peter Laurin
UCLA Riley Jackson
UCLA Shania Chelsea Mancol
UCLA Theodore Young
UCLA Timothy Pring
UCLA Uma Ram
UCLA Maximilian Kremser
UCLA Amira Salazar
UCLA Anastasia Delance
UCLA Brianna Yi
UCLA Charlie Kratus
UCLA Christian Huang
UCLA Daniela Rios
UCLA Deisy Garcia
UCLA Divya Rao
UCLA Karina Wong
UCLA Kaylee McAllister
UCLA Lily Haylett
UCLA Lorena Aguilar
UCLA Mariam Baghdasarian
UCLA Mia Nitsa Hermosillo
UCLA Natalie Han
UCLA Nicholen Vicencio

UCLA Nicolette Geola
UCLA Nikki Akhtari
UCLA Pilar Taylor
UCLA Ricardo De La Cruz
UCLA Stephen Ochoa
UCLA Zhou Zijun
UCLA Alexandra Rios
UCLA B'Elanna Vela
UCLA Bradley Raveh
UCLA Daniel Dominguez
UCLA David Xu
UCLA Dylan Zov-Schupp
UCLA Jenna Cameron
UCLA Jennifer Cervantes
UCLA Joelle Ngai
UCLA Joshua Odiase
UCLA Karina Ramirez
UCLA Melissa Villanueva
UCLA Michael Cano
UCLA Rosa Olmedo
UCLA Ada Jack
UCLA Addison Cross
UCLA Adella Kraski
UCLA alexander klauss
UCLA Ben Padan
UCLA Bianca Higa
UCLA Bulky Smith
UCLA Darcy Wawy
UCLA Dustin Frye
UCLA Emily munoz
UCLA Emily Perez
UCLA Gabrielle Trevino
UCLA Jade Blair
UCLA jeehyunn hwang
UCLA Mason Ng
UCLA Natalie Kevorkian
UCLA raul Aguilera
UCLA Sofiya Buchko
UCLA yuna song
UCLA Zach Borazyani

CALPIRG

Students

UCLA Aaron Tan
UCLA Alana Smith
UCLA Alana Milanese
UCLA Alexa Medina
UCLA Andy Alcazar
UCLA Anoushka Bhat
UCLA Audrey Bizzle
UCLA Ava Thao
UCLA Ayesha Syed
UCLA Ayla Saruhan
UCLA Charlotte Yao
UCLA Claire Ji
UCLA Daniel Gutierrez
UCLA Denise Chavez
UCLA Grace Timan
UCLA Leslie Martinez
UCLA Lesly Ramirez
UCLA Luis Ramirez
UCLA Madison McIntyre
UCLA Marlin Bradley
UCLA Natalie Li
UCLA Nina Reino
UCLA Owen Penry
UCLA Ria Sribar
UCLA Rosario Castillo-Rol
UCLA Sarah Khan
UCLA Sophia Dufour
UCLA Zhen Wang
UCLA Zoe Klein
UCLA Akemi Webster
UCLA Alice Chiang
UCLA Alicia Valinski
UCLA Aran Denis
UCLA Armando Solares
UCLA Artemis Yang
UCLA Avyay Toprani
UCLA Baljot Randhawa
UCLA Benjamin Hudnut
UCLA Briana Fowler
UCLA Catherine Day

UCLA Chretienne Isabelle
UCLA Christiana Downing
UCLA Colin Muaphy
UCLA Connor Davidson
UCLA Damon Ruiz
UCLA Daniel Zuzarte
UCLA Devyn Fulohum
UCLA Dilasha Patel
UCLA Drew Stackpoola
UCLA Elisa Chin
UCLA Eunwoo Kim
UCLA Evan Shen
UCLA Felicia Chen
UCLA Fiamma Lesky
UCLA Gizel Boonegra Lopez
UCLA Grace Wang
UCLA Helen Sanders
UCLA Ismael Amrtinez
UCLA Jazzlin Ong
UCLA Jesus Mejia
UCLA Jillian Aspan-Martin
UCLA John
UCLA Kainath Kamil
UCLA Kay Clement
UCLA Khalif Kamil
UCLA Kyra Sunil
UCLA Leah Acosta
UCLA Mia Pustrana
UCLA Mia Nagai
UCLA Milo Ryder
UCLA Nancy Rios
UCLA Nicholas Mobley
UCLA Patrick Cruz
UCLA Rana Miyagaki
UCLA Richa Thakre
UCLA Ronit Barman
UCLA Sarah Jeung
UCLA Sasha Zimet
UCLA Siofra Linden
UCLA Sirena Sandu

CALPIRG

Students

UCLA Valarie Wong
UCLA Valery Garcia
UCLA Vera Irber
UCLA Victor Lee
UCLA Zining Qiao
UCLA Jules Nunez
UCLA Kailyn Nguyen
UCLA Earl Park
UCLA Audrey Finch
UCLA Carson Nims
UCLA Catilleja Albert
UCLA Charlotte
UCLA Chloe Rodriguez
UCLA Dax Corcoran
UCLA Disha Nayak
UCLA Dylan Danmg
UCLA Elias Haskins
UCLA Fiath Alm-Clark
UCLA Gideon Dutnam
UCLA Helena Spydell
UCLA Jackson Bockian
UCLA Jaren-James Rubio
UCLA Javier Traver
UCLA Jennifer Lopez
UCLA Jeremy Reyes
UCLA Joselyn Sandoval
UCLA Joshua Thrift
UCLA LeiliRose Maohammadi
UCLA Lianel Salinton
UCLA Lily Cam
UCLA Luciaceleste garcia
UCLA Marissa Cobar
UCLA Meena Attota
UCLA Mehrnaz Bastani
UCLA miya yamamoto
UCLA Natalia
UCLA Neil Dasgupta
UCLA Peter Sun
UCLA Pranay Sashihhanth
UCLA rebecca nolasoo

UCLA Ricardo
UCLA Robert Cruz
UCLA Roy Teter
UCLA Samantha Fong
UCLA samy Benhirane
UCLA Soham Ghag
UCLA Sophia Garcia
UCLA Sophia Emens
UCLA Sydney Reimer
UCLA Tiffany Nguyen
UCLA Tobias Burgett
UCLA Tyker Dickenson
UCLA Wilmer Henriquez
UCLA Maya
UCLA Donna
UCLA Jayna Buhs Jackson
UCLA Nicole Peterson
UCLA Brian Choi
UCLA Avrey Tokuyama
UCLA emma kalb
UCLA Tomasso Abramsonward
UCLA Alberto Avdioj
UCLA Ananya Bhardwaj
UCLA Brandon Lazard
UCLA Charlotte Kelly
UCLA Elizabeth Williams
UCLA Eric Viramontes
UCLA Gobund Chink
UCLA Jeff Tang
UCLA L Siswanto
UCLA Luke Bourgeois
UCLA Natalia Capote
UCLA Nicole Holmes
UCLA Sage Swartz
UCLA Alexandra Flores
UCLA Quentin Gaudio
UCLA Setareh Kargahi
UCLA Dylan Choppin
UCLA Serena Watkins
UCLA Lillian Wonhardt

CALPIRG

Students

UCLA Lucas Goulart
UCLA Weslen Nunley
UCLA Alan Cruz
UCLA Raymond Ge
UCLA Christopher Borgen
UCLA Lexie Minvielle
UCLA Alisha Hassanali
UCLA Jordan Lombardi
UCLA Judit Chaclan
UCLA Daniela Alvarez
UCLA James Woolevy
UCLA Lucy Wong Ryniejski
UCLA Myles Gardiner
UCLA Leo Katz Facher
UCLA Charldrin Castro
UCLA Mikala Romanak
UCLA Aden Awad
UCLA Wyatt Brandt
UCLA Teizo Nakoyama
UCLA Leo Wall
UCLA Henry Dang
UCLA Mckenna Kaiser
UCLA Rachel Lei
UCLA Charles Kuang
UCLA Solomon Sang
UCLA Raela Jayasekara
UCLA Mack Harrison
UCLA Gianna Medina
UCLA Cassandra Campos
UCLA Michael Apan
UCLA Charlie Snyder
UCLA Toby Gajar
UCLA Kai Wallace
UCLA Samantha Shon
UCLA Rahul Jogadhenn
UCLA Leila Salam
UCLA Shoko Nagami
UCLA Panithi Kachinthorn
UCLA Savannah Alanis
UCLA Green Guo

UCLA Betty Mogollon
UCLA Lynnett Tryong
UCLA Nutpisa Mangkeo
UCLA Dean Mac
UCLA Allise Gao
UCLA Sasilio Cerdan Jr

CALPIRG

Students

UC Riverside Students

UCR Micheal Rasmussen
UCR Leonardo Robledo
UCR Heoyon Wang
UCR Mitchell Wei
UCR Andrew Viramontes
UCR Bobbie Granillo
UCR Chelsea Nguyen
UCR Aleva Dinh
UCR Jaahad Shana
UCR Malvika Seth
UCR Dayton Albery
UCR Kevin Saad
UCR Eric Fawcett-Ramirez
UCR Jaczya Guzman
UCR Gabriel Dial
UCR Alondra Alavez
UCR Amy Purecual
UCR Tristan Mulahusejnovic
UCR Jonthan Lam
UCR Lia Chae
UCR Micala Maxwell
UCR Ulices Ramirez
UCR Baniel Immanuel
UCR Jose Balderas
UCR Rochelle Reynoso-Gonzalez
UCR Gianmarco Navarro
UCR Aaron Lee
UCR Angel Bocanegra
UCR Vanessa Villegas
UCR Monaz Arshad
UCR Alexa Zelaya
UCR Arlette Ugalde
UCR Juan Perez
UCR Ivan Nguyen
UCR Ashley Wong
UCR Nathan Dhan
UCR Benedict Ignacio
UCR Dajany Martinez

UCR Jasmine Lia
UCR Carlos Serrato
UCR Nikita Raj
UCR Taylor Wong
UCR Amisha Shiman
UCR Adonai Reyes Portillo
UCR Maisie
UCR Edgar Cervantes Gonzalez
UCR Jamie Costellon
UCR Kayla Macavinita
UCR Marilyn Lopez
UCR Hanry Ganohbi
UCR Genalyn Guerrero
UCR Jacob Gonzalez
UCR Anggita Suryadwei
UCR Marilyn Gonzalez
UCR Fardin Zaman
UCR Vishmu Shukla
UCR Kayla Nguyen
UCR Kaia Jackson
UCR Xuanmai Nguyen
UCR Valeria Esquivel
UCR Danielle Arteana-Duarte
UCR Ivan Gonzaga Aviles
UCR Nkaamdka Bruee
UCR Xinru Jiang
UCR Karla Vargas
UCR Anthony Daniel Cruz
UCR Tramoia Mitchell
UCR Ana Gonzalez
UCR Micheal Nguyen
UCR Samantha Navarrete
UCR Kailey San
UCR Hamza Abdallah
UCR Grace Chrisopoulos
UCR Nic Lau
UCR Auleen Sekhon
UCR Rhoda Yeddu
UCR Enze Cui
UCR Nabeena Shavekat

CALPIRG

Students

UCR Jenna Hernandez
UCR Erica Jwa
UCR Angela Del Mundo
UCR Kaustan Pal
UCR David Jacinto
UCR Aayusha Regimi
UCR Randal Alvarado
UCR Sajana Kalidindi
UCR Ruthri Madani
UCR Alondra Rojo
UCR Audrey Dunnning
UCR Nehaa Suresh
UCR Estrella Mendez
UCR Roshni Chitturi
UCR Jaleyssy BarriosYague
UCR Andy Li
UCR Jasmine Khan
UCR Victoria Avina
UCR Manstserrat Duarte
UCR Kayla Pulce
UCR Fernanda Bazuca
UCR Katherine Perez
UCR Lily Ilous
UCR Sohana Ali
UCR Katherine Frías
UCR Kaliah Serna
UCR Rebecca Ramirez
UCR Srinija Attaluri
UCR Charlotte Sinclair
UCR Diya Dabni
UCR Valerie Haro
UCR Hazel Hora
UCR Naomi Mendel
UCR Stephanie Sandoval
UCR Cynthia De Leon
UCR Jacquelyn Clay
UCR Asma Kassar
UCR Isabel Maldonado
UCR Kayla Macias
UCR Christian Aguilera

UCR Nicholas Chaney
UCR Ty Mandel
UCR Dylan Constanza
UCR Angelina Valtierra
UCR Delawn Antonia Crawford
UCR Anureet Barr
UCR Sophia Breeze
UCR Jordan Marquez
UCR Zoey Clark
UCR Clara Manzo Gamino
UCR Kathren Helo
UCR Elisa Lottrell
UCR Biana Xitamul
UCR Rubaita Iqbal
UCR Lleyton Javier
UCR Garrett Hammerele
UCR Tyler Omega
UCR Raul Flores
UCR Samantha Morales
UCR Damen Li
UCR Samantha Devevadiga
UCR Caleb Gebreas
UCR Aarnyiah Williams
UCR Adryann Aguilar
UCR Arun Wetzell
UCR Jacqueline Marengo
UCR Julia Velasco
UCR Patrick Sam
UCR Karen Santana
UCR Blanca Xitamul
UCR Angelika Tsai
UCR Tiana Reisner
UCR Esmeralda Camarena
UCR Haley Urohn
UCR Brenda Alvarado
UCR Juan Ortega
UCR Charlotte Valeria
UCR Sunset Samano
UCR Vijay Sriramineni
UCR Athena Ibarra

CALPIRG

Students

UCR Jonathan Garcia Lopez
UCR Angel Emele
UCR Yamile Lara
UCR Daisy Franco
UCR Jemaaima Roie Geralde
UCR Hunter Palatini
UCR Aryan Shanra
UCR Alyssa Guo
UCR Vanessa Del Rosario
UCR Elisa Zhang
UCR Efren Guerra
UCR Jocelyn Barnes
UCR Julissa Arellano-Gomez
UCR Subed Lamichhane
UCR Mia Chen
UCR Kurtis Frost
UCR Alang Allen
UCR Derick Nguyen
UCR Jafar Muradi
UCR Alex Totan
UCR Giselle
UCR Philo Labih
UCR Sean Oropeza
UCR Norma Martinez
UCR Christopher Crieghton
UCR Anvi Chavbal
UCR Vanessa Perez
UCR Veronica Ramirez
UCR Preston Chu
UCR Victoria Vdo
UCR Shelly Park
UCR Mirih Vu
UCR Shellby Park
UCR Victoria Vasquez
UCR Sara Hameza
UCR Miguel Melendez
UCR Katrina Nguyen
UCR Morgan Darrash
UCR Caren Rangel
UCR Katlyn Parvisto

UCR Alex Manjarrez`
UCR Milan Momhamed
UCR Kelsey Jonkey
UCR Patrick Guau
UCR Ría William
UCR Sachi Padilla
UCR Yvonne Royzca
UCR Derek De Garcia
UCR Nathaniel Morales
UCR Alana Phan
UCR Wesley Bui
UCR Hasta John
UCR Yahir Quezada
UCR Z Wong
UCR Rachel Infante Cuevas
UCR Maria Carrillo
UCR Asha Gutierrez
UCR Micheal Belintona
UCR Maya Pierce
UCR Malia Muraoka
UCR Leonardo Gori
UCR Serenity Blancarte
UCR Yuon Kim
UCR Emily Richmond
UCR Destiny Gonzalez
UCR Alees Carrizales
UCR Ash murugen
UCR Ethan Lomibao
UCR Victoria Cunningham
UCR Aimee Diaz
UCR Emma Giu
UCR Melissa Gonzalez
UCR Jules Stei
UCR Jyothi Kumar
UCR Doan Nguyen
UCR Amiya Aguilar
UCR Vremee Khan
UCR Angel Esperanza
UCR Kenny Jimenez
UCR Damian Orozco

CALPIRG

Students

UCR Zuleydi Garcia
UCR Krystal Ordaz
UCR Nia Barstow
UCR Mayghan Grome
UCR Christian Thompson
UCR Daniel Gutierrez
UCR Alise Dela-Paul
UCR Julia Kim
UCR Alex Barca
UCR Seher Khan
UCR Alexander Ehriman
UCR Veronica Rubio
UCR Jasmine Savessa Rodriguez
UCR Anna Meihan-Chen
UCR Jessica Vicante
UCR Maiya Wooliver
UCR Judy Mendoza
UCR Monica Ruvalacaba
UCR Hayley Chai
UCR Connor Sennings
UCR Amy
UCR Chrisina Mora-gaspar
UCR Jonathan Villosa
UCR Jorden Viramontes
UCR Nina Haywood
UCR Winston Vu
UCR Ricardo Moran
UCR Aaron Nissanka
UCR Nicole Chen
UCR Tanaire Johnson
UCR Melaniel Heredia
UCR Erin Alcaraz
UCR Victoria Cruz Martinez
UCR Ruoxi Zheng
UCR Dulce Ortiz
UCR Sachman Panny
UCR Rose Wang
UCR Andrew Kim
UCR Ariel Lazo
UCR Betheny Rangel

UCR Melissa Mendez
UCR Alessandro Gutierrez
UCR Jacqueline Armenta
UCR Bailey Dizon
UCR Aislinn Cole
UCR Magdalena Urzua
UCR Enoch Wang
UCR Aleshanee Perez
UCR Michelle Zatarian
UCR Rahul Muthauarapu
UCR Ethan Chai
UCR Mia Mendez
UCR Julietta Sedrakyan
UCR Tran Nguyen
UCR Seeya Dhanawat
UCR Peri Parsons
UCR Vkaaamaka Bruce
UCR Diana Herrera
UCR Evangeline De Leon
UCR Aanya Sanan
UCR Samantha Berry
UCR Angelina Currie
UCR Alberto Macias
UCR Unique Mckelevy
UCR Amaree Thomas
UCR Praem Kumar
UCR Arely Medina
UCR Samuel Lin
UCR Arya Gardouni
UCR Anshah Khan
UCR Dalia Mokdad
UCR Kimberly Perez
UCR Ernesto Mora
UCR Alex Huffstedtler
UCR Sally San Juan
UCR Chinasa Nnamani
UCR Terralyn Ta
UCR Dylan Danyleyko
UCR Xin Mar
UCR Hannah Ahamed

CALPIRG

Students

UCR Alex Lai
UCR Ava Raj
UCR Alexandra Arroyo
UCR Mailyng Nguyen
UCR Marializ Valiente
UCR Vivian Chacon
UCR Henya Dadem
UCR Ramanthan Valliappan
UCR Erin Da la Atorre
UCR Amy Mukui
UCR Pinkstar Mendez
UCR William Uribe
UCR Joshua Orosco
UCR Rohan Tripathi
UCR Lilia Moghaddas
UCR Jamila Bawahab
UCR Peter Milenknov
UCR Jared Ondo
UCR Shawn Ng
UCR Emilly Alvarez
UCR Sanya Aul
UCR Amalisa Cotez
UCR Valerie Gonzalez
UCR Kaegan Chee
UCR Justin Wu
UCR Simon Delgado
UCR Gideonkay Molina
UCR Camila Hernandez
UCR Lyndsey Coleman
UCR Helian May Manipon
UCR Lauuren Schroeder
UCR Siya Panchal
UCR Beulah Han
UCR Ethan Lim
UCR Dulce Estrada
UCR Tony Boylan
UCR Michelle Alfaro-Romero
UCR Yessenia Cardenas
UCR Kaylee Luu
UCR Alexis Rojas

UCR Abhaydeep Singh
UCR James Ford
UCR Lusita Madera Gonzalez
UCR Angelina Howl
UCR Adriana Moran
UCR Omar A. Lauviano
UCR Melissa Chamorro
UCR Alize Perez
UCR Daniela Gomez
UCR Kevin Dulanco
UCR Fernando Hernandez
UCR Owen Xu
UCR Fanny Zngang
UCR Ashley Marmolejo
UCR Samantha Navarrete
UCR Mariana Fawaz
UCR David Mayo
UCR Nathan Gullien
UCR Emily Ortega
UCR Nick Johnson
UCR Kendell Li
UCR
UCR Jacob Lopeo
UCR Samantha Vargas
UCR Catherine Aguilar
UCR Jasmine Mendez
UCR Jasmine Khan
UCR Navya Batra
UCR Christine Harris
UCR Hannah Pak
UCR Leslie Ramirez
UCR Ashley Alavadez
UCR Elena Woolsey
UCR Alondra Aguado
UCR Ariannis Rios-Vaal
UCR Leonardo Altafini
UCR Idalee Micheal
UCR Tina Haeri
UCR Rohan Wickramasinghe
UCR Elisa Ruiz

CALPIRG

Students

UCR Hana Lee
UCR Isatu N'Diaye
UCR David Mercer
UCR Salman Habib
UCR Jessica Vargas Gallegos
UCR Derrian Benoit
UCR Natalia Jacobos Santos
UCR David Ruiz-Martinez
UCR Paula Olea
UCR Corey Tran
UCR Misaki Matsuda
UCR Shae Quince Brown
UCR Emery Wood
UCR Valeria Esquivel
UCR Jocelyn Roman
UCR Grace Zhang
UCR Chiamaka Ileon
UCR Miguelang Ecomaamo
UCR Vincent Rael
UCR Adrianne-e Mendoza
UCR Lawrence Li
UCR Amlan Hota
UCR Abdul Alktaifi
UCR Lillian Fees
UCR Melissa Mendez
UCR Brayden Nguyen
UCR Thu Tran
UCR Lauren Ortega
UCR Omar Poossani
UCR Venkata Saiman Manogna Karnati
UCR Jolie Buyson
UCR Jaroia Dathorne
UCR Jules Goeken
UCR Jancrizto Ruidas
UCR Jabpreet Kaur
UCR Ethan Ballada
UCR Katie Martinez
UCR Alex Wong
UCR Emily Rodriguez
UCR Chase Clements

UCR Eterfania Juarez
UCR Christine Vallejo
UCR Jonthan Martinez
UCR Anna Gonzales
UCR Aayusha Regmi
UCR Sophia Dalibs
UCR Daniel Brees
UCR Vishruth Sriram
UCR Joseph White Jr
UCR Ruben Magana
UCR Isaiah Mendoza
UCR Joshua Mendoea
UCR Joshua Scheel
UCR Brisa Rojas
UCR Kaitylin Levenson-Cupp
UCR Nathan Pena
UCR Lenny Thai
UCR Breanna Hurveta
UCR Guido Potesta
UCR Roxanna Ly
UCR Joanna Martinez
UCR Steen Joseph
UCR Josh Gutierrez
UCR JeeYu Lim
UCR Victor Cuchilla
UCR Shaquan Shine
UCR Giselle Carlos
UCR Antonio Vidal
UCR Francis Cristobal
UCR Crystal Sun
UCR Brandon Williams
UCR Carlos Serrano
UCR Victor Rossi
UCR Krista Manalo
UCR Lesley Gonzalez
UCR Rain Calabro
UCR Pablo Avendado
UCR Nerida Gonzalez
UCR Maxla Shikari
UCR Analie Payan

CALPIRG

Students

UCR Julian Uribe
UCR Stephanie Lopez
UCR Laura de la Torre
UCR Alex Sinclair
UCR Nia Barstow
UCR Mason Chow
UCR Amando Jaquez
UCR Aleena Ortega
UCR Rauen Sanchez
UCR Zachery Ghiuzelian
UCR Amy Gonzalez
UCR Kayla Perez
UCR Wesley Lei
UCR Ariana Miranda
UCR Mauricio Chirinos
UCR Lea Villa-Mota
UCR Jesus Ramos Nunez
UCR Aakriti Shurma
UCR Ali Abay
UCR Aron Chacko
UCR Maegan Duenas
UCR Giselle Alonso Perez
UCR Robert Gibson
UCR Romi Patel
UCR Mihika Pattan
UCR Vanice Hoang
UCR Miguel Rodriguez
UCR Katherine Hernandez
UCR Jasmine Lai
UCR Andrea Medina
UCR Anika Shah
UCR Abhiav Vyas
UCR Tiffany Ocegueda
UCR Abbey Lyew
UCR Emely Gutierrez
UCR Rachel Bangasan
UCR Majda Bouzaki
UCR Ulises Ponce
UCR David Valquez
UCR Christopher Cung

UCR Whickneshvaran Odaiyappan
UCR Sam Va
UCR Marissa Cerantez
UCR Emily Fang
UCR Pablo Ruvalcaba
UCR Jasmine Slison
UCR Ashley Tham
UCR Jingyan Zhang
UCR Maximillian Ahamdi
UCR Camille Castano
UCR Steven Greco
UCR Wyatt Hasenaur
UCR Analeah Mafnas
UCR Tabito Sakamoto
UCR Danh Nguyen
UCR Areli Comparan
UCR Cadence Sandel
UCR Heather Sayavong
UCR Thennal Sonitahajaml
UCR Nelson Yang
UCR Citlialli Solano
UCR Allen Abarca
UCR Marcus Brown
UCR Ezekiel Del Rio
UCR Nami Rkattash
UCR Jaedan Smith
UCR Vishal Athotv
UCR Cooper Chea
UCR Kristine Santos
UCR Tristan Slaughter
UCR Joy Pham
UCR Jess Sanchez
UCR Aaron Chen
UCR Vivian Hernandez
UCR Brandon Tran
UCR Hazel Minger
UCR SM Umayer
UCR Gelly Mendoza
UCR April Butler
UCR Alon Telaan Kubo

CALPIRG

Students

UCR Santo Gonzalez Lopez
UCR Samuel Gonzalez
UCR Tanya Gambhir
UCR Tarasvuin Thusoo
UCR Celeste Wong
UCR Jocelyne Castro
UCR Kimberly Arreguin
UCR Johnathan Setiabudi
UCR Justin Lien
UCR Nathanie Matora
UCR Angel Ramirez
UCR Joshua Wang
UCR Victor Camacho
UCR Samuel Cuevas
UCR Maria Estrada
UCR Hannah Eli Macias
UCR Sebastian Sosa
UCR Emelie Vazquez
UCR Bianca Via
UCR Alek Ramirez
UCR Emma Kiane
UCR Sophia Delapena
UCR Priscilla Esparaza
UCR Breana Guerra
UCR Ariana Bolwei
UCR Liquan Tan
UCR Emely Vivieros
UCR Ester Klm
UCR Aylea Gonzalez
UCR Breeze Ordorick
UCR Matthias Rios
UCR Antonio Terziysky
UCR Drew Thompson
UCR Athena Chen
UCR Camille Lu
UCR Sarah Morales
UCR Anthony Sanchez
UCR Gonzalo Ricardez
UCR Jessica Santana
UCR Annabelle Wllison

UCR Alexandra Vargas
UCR Ryan Huang
UCR Sarah Hernandez
UCR Ever Blaine-Johnson
UCR Matthew De Haro
UCR Felipe Gaxiola-Perez
UCR Sulia Iskanden
UCR Adam Katam
UCR Dylan Liang
UCR Kevin Massey
UCR Jason Mendez
UCR Julissa Diaz
UCR Ashley Ochoa
UCR Panton Gravett
UCR Sage Hawley
UCR Brianna Perez
UCR Sriram Vempati
UCR Alina Lugovska
UCR Sam Cayabyab
UCR Carter Proulx
UCR Kelly Bowman
UCR Felix Btrne
UCR Daniel Tzunux
UCR Venus Thomas
UCR Sophia Alexander
UCR Albert Erazo
UCR Omar Karatahan
UCR Alex Toursarkissian
UCR Ian Kelly
UCR Karen Reyes
UCR Gabriel Arimida
UCR Nathan John Leopoldo
UCR Vaishnayi Varnasy
UCR Ryan Welch
UCR Matthew Zong
UCR Summer Castanon
UCR Isai Zapata
UCR Billy Lee
UCR Emely Guzman
UCR Liam Hallenberg

CALPIRG

Students

UCR Leyna Nguyen
UCR Aric Vootkur
UCR Ting-Yu Liu
UCR Max De Jesus Cotija
UCR Amy Anna-Hoang
UCR Syed Hashim
UCR Carter Menig
UCR Jones Moffett
UCR Aaron Candia
UCR Alexandra De Leon
UCR Andrew Duran
UCR Itzel Garcia
UCR Jeily Olivares
UCR William Levison
UCR Sophia Smart
UCR Jazmin Metz
UCR Cristo Padilla
UCR Liliana Roman
UCR Nicole Velasco
UCR Stephanie Mendez
UCR Carl Edpao
UCR Bill Guan
UCR Amber Hedayi
UCR Celso Lopez
UCR Jcthenia Obtinallz
UCR Leyna Ledesua
UCR Daisy Mendiola
UCR Nabeena Shaukat
UCR Ashita Srinivasmurthy
UCR Anna Cao
UCR Lark Jazo
UCR Kha-Thy Pham
UCR Luis Vila
UCR Lance Yuuns
UCR Anika Jones
UCR Valeria Gonzalez
UCR Natalie Almasad
UCR Jaliuua Cobian
UCR Owen Darby
UCR Emilio Mcdonald

UCR Vincent Rodriguez
UCR Joshua Trinidad
UCR Molly Nguyen
UCR Gavin Chow
UCR Kayleen Flores
UCR Nicholas Quintero
UCR Ahmed Zyoud
UCR Xuechan Wang
UCR Cassidy Chakford
UCR Kenial Montano
UCR Arista Papanagioton
UCR Carmel Shenhav
UCR Justin Wei
UCR Nahal Farrukh
UCR Gayana Kodagoda
UCR James Luna
UCR Athena Pantoja
UCR Andrew Romanenko
UCR Diego Ruiz
UCR Daniel Shaftary
UCR Chloe Galope
UCR Nalley Soto
UCR Angela Contreras
UCR Rachel Gervacio
UCR Ashley Meza
UCR Alex Thomas
UCR Sara Espineza
UCR Joseph Arriaga
UCR Sandy Martinez
UCR Brenda Hernandez
UCR David Li
UCR Jenny Alonso
UCR Mariela Torres
UCR Melanie Ramirez
UCR Victor Mozo
UCR Jesus Gomez
UCR Rishi Partel
UCR Satyadev Gangineni
UCR Mauricio Vega
UCR Aditya Bhardwaj

CALPIRG

Students

UCR Vincent Colocho
UCR Jayden Yarbrough
UCR Elvis Arellano
UCR Elizabeth Bojorquez
UCR Ibrahim Sudqi
UCR Audry Herrera Castro
UCR Celeste
UCR Damonte Hodges
UCR Hanyu Cui
UCR Agustén Wieners
UCR Guadalupe Velasco
UCR Jonanthan Silva
UCR Daniel Rodriguez
UCR Bryan Gonzalez
UCR Oscar A. Morales
UCR Roshan Rudd
UCR Jerry Yin
UCR Melissa Micheal
UCR Xi Yang Yang
UCR Guzman Matias
UCR Cesar Velasco
UCR Yohannes Zerihun
UCR Jessica Salas
UCR Arman Orudzmyan
UCR Darilyn Rodriguez
UCR Lina Moammar
UCR Ukaamaka Bruce
UCR Alex Toursarkissian
UCR Aliyah Nelms
UCR Ana Reyes
UCR Akshita Singn
UCR Randy Elhamra
UCR Joaquin Gutierrez
UCR Angel Garcia
UCR Ryan Owen
UCR Hazel Molina
UCR Benjamin Bravo
UCR Art Rivera
UCR Natasha Williams
UCR Emelie Mcelhaney

UCR Nadine Lopez
UCR Bryce Coen
UCR Olaide Olukamni
UCR Isabelle Guerrero
UCR Carson Eskerson
UCR Yvette Gonzalez
UCR Davinia Murhalay
UCR Chris Wee
UCR Angela Del Mundo
UCR Isabella Hogan
UCR August Simene
UCR Anna Meihan Chen
UCR Natalie Upp
UCR Ruby Perez
UCR Medha Yasa
UCR Moustafa Afif
UCR Jzziel Corona
UCR Nikhita Bulusu
UCR Destiny Martinez
UCR Bryan Almazan
UCR Luis Martinez
UCR Martin Oamianbarcia
UCR Reina Cervantes
UCR Xiomara Manzo
UCR Josh Hu
UCR Francisco Villegas
UCR Irene Rya
UCR Anoy Cuellar
UCR Tyler Marshall
UCR Erin Gil
UCR Alina Rudey
UCR Ashley Moreno
UCR Kelsey Xochitiotzi
UCR Krisha Dulanco
UCR Dhruv Gupta
UCR Rachel Park
UCR Yichao Zhan
UCR amelia Sohoch
UCR Daniel Kim
UCR Bryan Ung

CALPIRG

Students

UCR Star Negrete
UCR Uriah Borrello
UCR Johnny Lei
UCR Richard Hilles
UCR Neha Lloyd
UCR Orlane Tessa Hernandez
UCR Sunni Laguna
UCR Steven Jeon
UCR Joshua Curoel
UCR Kayla Licon
UCR Ximena Garcidvenas
UCR Riya Charora
UCR Leonardo Aguilar
UCR Alieen Rojas
UCR Tzng Huang
UCR Juliet Savage
UCR Alexis Ramirez
UCR Christopher Chicas
UCR Yovany Durate
UCR Fernando Gutierrez
UCR Alexandra Gonzalez
UCR Jayleen Rojas
UCR Tugldar Bat-Erdene
UCR Keisha Belen
UCR Jazmin Lopez
UCR John Daniel Manlambus
UCR Asceline
UCR Jackson Miller
UCR Jaime Reveles
UCR Dhilian Sahay
UCR Alessandro Franco
UCR Sammi Tung
UCR Leela Raneeth
UCR Liam Richins
UCR Thea Gray
UCR Yuhan Tong
UCR Valerie Gomez
UCR Susana Trasvina
UCR Olga Herrera
UCR Kelleigh Hort

UCR Ai Cathloie
UCR Gabriel Rodriguez
UCR Henry Rodriguez
UCR Mike Hawk
UCR Dick Long
UCR Jacob Morales
UCR Steven Wang
UCR Michelle Li
UCR Xin Zhang
UCR Maria Lopez
UCR Issac Rodriguez
UCR Michael Salazar
UCR Rachel Monica
UCR Yeeun Cho
UCR George Lopez
UCR Jermiah Murphy
UCR Vidur Sury
UCR James Mcmillan
UCR Aaron Hunter
UCR Peter Jeong
UCR Tyler Nguyen
UCR Gustavo Garcia
UCR Damien Solares
UCR Hanson Chan
UCR Lissette Mejia
UCR Dookie Toeburger
UCR Queen Udeh
UCR Fatuma Eeinu
UCR Nataly Apparicio
UCR Selena Chen
UCR Edwin Zavala
UCR Justin Myint
UCR Natalie Salazar
UCR Eric Schawrcz
UCR Gisselle Olea
UCR Tinalé Qi
UCR Larry Sixtas
UCR Isabella Bryant
UCR Eduardo Arellano
UCR Luis Diaz

CALPIRG

Students

UCR Stephanie Salas
UCR Fernando Ayala
UCR Nayeli Garcia
UCR Salma Ahmed
UCR Kayla Chen
UCR Nathaly Gonzalez
UCR Benjamin Jack
UCR Rupin Nagireddy
UCR Briana Salmeron
UCR Emmaune Gonzalez
UCR Brenda Perez
UCR Giovanna Bernal
UCR Jason Aziz
UCR Lelya Karathan
UCR Jacen Nantes
UCR Dylan Tang
UCR Shaun Mansoor
UCR Harini SIVAKUMAR
UCR Harry Song
UCR Suhalia Mordan
UCR Len Samaan
UCR Rebecca Seanez
UCR Kori Phetmisay
UCR Bryan Tapia
UCR Gustavo Hernandez
UCR Sin Szman
UCR Daniel Galeana
UCR Ethan Chen
UCR Frankie Ramos
UCR Issac Lin
UCR Ryan Nguyen
UCR Triniti Jelks
UCR Karime Palacios
UCR Zachery Deininger
UCR Jiachang Ye
UCR Sreeya Gambhirro
UCR Kennia Carballo
UCR Nathan Hoang
UCR Yusra Khan
UCR Ananya Mopor

UCR Mariam Abbas
UCR Henna Davidson
UCR Ria Maria Mathew
UCR Jaden Thai
UCR Sophia Breeze
UCR Shwetna Anand
UCR Joghua Xu
UCR Sydney Chiles
UCR Kelvin Lin
UCR Alex Wang
UCR Ahmad Abdallah
UCR John Cotton
UCR Gustavo Sandoval
UCR Oscar Yuan
UCR Adolfo Alaniz
UCR Sachi Dange
UCR Rose Alxarado
UCR Aaron Hussey
UCR Lyniah Mitchell
UCR Arnold Molina
UCR Josepha Sepulved
UCR Wilson Chen
UCR Claudia Armenta
UCR Ashley Kim
UCR Nhu Truong
UCR Andres Robles
UCR Sabrina Gallegos
UCR Alexander Tucker
UCR Yessica Moreno
UCR Jamie Blancaflor
UCR James Adkins
UCR Britney Lee
UCR Litzy Marin Alvarado
UCR Andre Altoon
UCR Anthony Santos
UCR Evie Wilson
UCR Mahi Ekmekci
UCR Aliei Zamorano
UCR
UCR Lnayiah Holston

CALPIRG

Students

UCR Corven Neal
UCR Leunam Diaz
UCR Danae Nuuez
UCR Selah Romo
UCR Kenechukwu Molokwu
UCR Stephanie Salinas
UCR Kel Umozurike
UCR Chiamaka Llon
UCR David Vu
UCR Trvongle
UCR Isha Tu
UCR Francine Yopez
UCR Sheyla Ordonez
UCR Anita Smith
UCR Nathalie Alfenrez
UCR Sidney Guirola
UCR Jonarthan Munoz
UCR Kaitylin Molinar
UCR Zoey Tang
UCR Alabella Zanaleta
UCR Carlos Garcia
UCR Kelly Prak
UCR Valery Gonzalez
UCR Samuel Gross
UCR Hannah Huang
UCR Verence Ibarra
UCR Dimitri Galvez
UCR Valentina Mendez
UCR A'Niyan Ford
UCR Leon Praphatananda
UCR Mark
UCR Diana Ramirez
UCR Bertha Rivas
UCR Luis Villa
UCR Mason Davis
UCR Mathew Wu
UCR Kaylee Miranda
UCR Katlyn Paparisto
UCR Roy Kim
UCR Sophia Akkara

UCR Monsterrat Duarte
UCR Cesar Favela
UCR Justin Meggerson
UCR Melaku Sahle
UCR Canina Tong
UCR Lauren Cuevas
UCR Leader Jin
UCR Aristi Papapanagioton
UCR Maya Column
UCR Kimberly Mayoral
UCR Destiny Munoz
UCR Giselle Cuz
UCR Analise Delp
UCR Keena Lin
UCR Daniel Aguliar
UCR Katelyn Abasta
UCR Gabrielle Dial
UCR Daniel Remedios
UCR Daniel Remedios
UCR Angel Hernandez
UCR Julie Cervantes
UCR Evnice Lee
UCR Jonathan Sosa
UCR Daniel Lopez
UCR Giovanni Ramirez
UCR Hector Naarro
UCR Dvshyant Vaishnaw
UCR Yipin Dharpure
UCR Gabriella Armenta
UCR Cedrick Toussaint
UCR Molly Martinez
UCR Tharunya Yogananoa
UCR Andrea Cuevas
UCR Brandon Santos
UCR Nayellie Frias
UCR Brian Marquez
UCR Chenyu Eric
UCR Hon Jobe
UCR Jaden Gomez
UCR Kynori Vernell

CALPIRG

Students

UCR Hector Mendoza
UCR Steven Nguyen
UCR Namartha Kyhati Kadali
UCR Nicolas Quintera
UCR Estrella Del Carmen
UCR Stefen Suslilo
UCR Matthew Hagan
UCR Alexys Cuz
UCR Kathlyn Lee
UCR Samantha Sardilla
UCR Serena Patel
UCR Valerie Cheng
UCR Asceline Uribe
UCR Irene Rya
UCR Yasmeen Candela's
UCR Martin Damian Garcia

UC Irvine Students

UCI Roisin Oxley
UCI Tania Bayon
UCI Sofia Del Fine
UCI Anna Wu
UCI Linda Valencia
UCI Bianca Manganaan
UCI Taylor Blank
UCI Shiyu Huang
UCI Tanvi Kurane
UCI Kristina Adikari
UCI Rocio Gil
UCI Michael Lee
UCI Catharine Nightingale
UCI Anthony Rodriguez
UCI Carol Gonzalez
UCI Mark Young
UCI Frankie Boren
UCI Nicholas Manou
UCI Philip Dinica
UCI Anderson Kwon
UCI Erin Tuscano
UCI Myra Saffo
UCI Elani nenaao
UCI Alondra Valenzuela
UCI Sean Watanabe
UCI John Channell
UCI Yufei Xie
UCI Dania Martinez
UCI Isabel Dar-Santos
UCI Jake Belikovitz
UCI Viviana Arguello
UCI Aislinn Coombs
UCI Vanessa Arreola
UCI Nataly Garcia
UCI Henry Griffin
UCI Austin Wells
UCI Jerusha Pala
UCI Alexis Parker

CALPIRG

Students

UCI Faysal Kubaisi
UCI Justin Chang
UCI Marie Gutierrez
UCI Jozette Landeros
UCI Gloria Martinez
UCI Zamira Amaro
UCI Lucas Weiss
UCI Liliana Cipriano
UCI Lamar Tabba
UCI Roberto Ramirez
UCI Yvette Jurado
UCI Mateo Taylor
UCI Morgan Kopish
UCI Davis Thuillier
UCI Bishop Victory
UCI Jamal Jackson
UCI Briseyda Cottes
UCI Lola Yan
UCI Emily Ocegueda
UCI Ferdaouss Elmoussaid
UCI Yesmin Quiej
UCI Ravenna McFarland
UCI Tamara Floresneyra
UCI Arena Galeana
UCI Ethan Alvarado
UCI Sarika Patil
UCI Ariadna Gonzalez
UCI Mia Casillas
UCI Eric Tapia Chiman
UCI Lorenzo Minney
UCI Siobhan Reed
UCI Cedric Buerk
UCI Beth Arshagouni
UCI Isaac Kwon
UCI Allison Huang
UCI Ethan Chen-Parks
UCI Natzumy Zavala
UCI Evan Landeros
UCI Ryder Hsieh
UCI Daniel Salameh

UCI Derek Yeghiazarion
UCI Nova Chaichuchot
UCI Aiden Wolf
UCI Elisa Lu
UCI Jeffrey Zhong
UCI Chloe Herrick
UCI Nirvana Abdelaal
UCI Ganeev Sidhu
UCI Lynn Ngyuyen
UCI Caren Braza
UCI Isaac Guevara
UCI Samith Moota
UCI Tiffany Chu
UCI Eric Gajdusek
UCI Mason Susas
UCI Phillip Zeng
UCI Stephen Kim
UCI Shujin Wang
UCI Johanan Peralta
UCI Wesley Laurence
UCI Xianwei Hou
UCI Yvonne Tseng
UCI Nam Tran
UCI Nathan Lieu
UCI Ashley Truong
UCI Natalya Forys
UCI Jerry Yang
UCI Brenna Cowley
UCI Andrew Seefeldt
UCI Victoria Lenman
UCI Leticia Morales Ruiz
UCI Mykaela Ly
UCI Valerie Ugarte
UCI Zexuan Wang
UCI Isabella-Joal Arcon
UCI Mariah Banerjee
UCI Daisy Penney
UCI Benjamin Chun
UCI Leo Kawashima
UCI Jackson Wagg

CALPIRG

Students

UCI Miles Moyer
UCI David A Tejada
UCI Andrew Vizcaya
UCI Ruby Arreola
UCI Yao Fang
UCI Sophia Thomas
UCI Kimi Tanaka
UCI Isabella Morgan
UCI Imartsonde Guzman
UCI Jasmine Cordero
UCI Aileen Lee
UCI Ava Gronemeyer
UCI Ayomide Ibitoye
UCI Kelsey Beaulieu
UCI Jerry Nguyen
UCI Vanessa Alonzo
UCI Savannah Gainsborough
UCI Derik Zhu
UCI David Mapplegate
UCI Marvin Leung
UCI Chad Wong
UCI Jiya Singh
UCI Vladimir Schotkin
UCI Isaiah Vergara
UCI Justin Bran
UCI Austin Lo
UCI Kiyana Schillings
UCI Beverly Jackson
UCI Kimberly Estavillo
UCI Megan Deseo
UCI Kori Harlan
UCI Shahed Alharbi
UCI Francisco Vazquez
UCI Faith Nicoll
UCI Laurencia Chmielarski
UCI Sydney Nguyen
UCI Brian Bui
UCI Yaslin Carrasco
UCI Naomi Ramos
UCI Devin Jones

UCI Trinity Becerra
UCI Mylie Diep
UCI Demetri Rosas
UCI David Thomas
UCI Boyi Xu
UCI Jesus Zaragoza
UCI Serena Fodor
UCI Christine Shahnazarian
UCI Bryant Lopez
UCI Diego Guzman
UCI Ryan Oh
UCI Noah Reynen
UCI Amaya Rodriguez
UCI Calvin Li
UCI Nicholas
UCI Natalie Hernandez
UCI Yibo Zhang
UCI Rachel Tu
UCI Brandy Vasquez
UCI Ava Turner
UCI Alexa Lopez
UCI Elva Tang
UCI Elena Gracia
UCI Tu Nguyen
UCI Simon Li
UCI Daniel Suarez
UCI Alana Guzman
UCI Steven Anh Nguyen
UCI Thomas Dao
UCI Nathan Chavez
UCI Isabel Tupe
UCI Caden Matuszewicz
UCI Brandon Chau
UCI Coen Jenkins
UCI Prateek Suram
UCI Manvitha Kancharla
UCI Aiden Humphreys
UCI Rishi Murumkar
UCI Sandeep Gullapalli
UCI Madelaine Flasck

CALPIRG

Students

UCI Quinn Vaughn
UCI Matthew Gomez
UCI Josue Flores
UCI Kylie Jones
UCI Betty Liu
UCI Corina Beltran Aguayo
UCI Amy Maldonado
UCI Ashley Olaz
UCI Toby Nguyen
UCI Kefang Zhang
UCI Jocelyn Lopez
UCI Oswald Dominguez
UCI Jake Podewils
UCI Nolan Miranda
UCI Aidan Noonan
UCI Melanie Nguyen
UCI Leilani Cisneros
UCI Tyra Logan
UCI Gaige Wilborn
UCI Manan Atif
UCI Youssef Kaddeche
UCI Alice Shen
UCI Prabhav Pragash
UCI Savannah Gonzalez
UCI Song Wang
UCI Mebaot Etnafu
UCI Harol Matias
UCI Jonathan Zhang
UCI Yitong Zhang
UCI Estella Yan
UCI Aaron Liu
UCI Lilian Ba
UCI Lauren Lee
UCI Aileen Aguillon
UCI Calvin Zhang
UCI Alexa Duffy
UCI Tim Cho
UCI Lazarus Acuna
UCI Grace Lamarre
UCI Tory Jaimez

UCI sikai lin
UCI Rachel Khorashadi
UCI Ryan Hansen
UCI John Lee
UCI Adam Friedman
UCI AJ Razz
UCI Arteaga Brianna
UCI Shazeeya Chumber
UCI Teresita Esquivel-Aguirre
UCI Diego Cisneros
UCI Johnny Do
UCI Isaac Rico
UCI Chris Pohl
UCI Chaemin Lee
UCI Hayden Waller
UCI Jaren Silva
UCI Jett Antell
UCI Ngoc Nguyen
UCI Justin Nguyen
UCI Elisander Ayala
UCI Anthony Flores
UCI Zoe Su
UCI Ethan Feldman
UCI Angela Chavez
UCI Zed Rafael
UCI Seongjun Chin
UCI Sena Barlas
UCI Cole Gendron
UCI Joshua Labrador
UCI Celina Chang
UCI Aaron Sato
UCI Mayerly Castillo
UCI Emily Dibene
UCI Julie Challain
UCI Alycia Edquilang
UCI Jeannine Viruet
UCI Guadalupe Cortez
UCI Jacob Speciale
UCI Fionna Bennett
UCI Ayla Baig

CALPIRG

Students

UCI Joshua Tellez
UCI Esme Fritton
UCI Chun-Jen Chen
UCI Francisco Aguilar
UCI Sinclair McDaniel
UCI Sohum Pulijal
UCI John Hong
UCI Vincent Woo
UCI Vada Nguyen
UCI Amber Escario
UCI Mayumi Advinoula
UCI Yousuf Rao
UCI Diya Karthikenyan
UCI Diana Garcia
UCI Bodhi Pon
UCI Bodhi Pon
UCI Anthony Ramos
UCI Sanail Amir
UCI Ali Khreddine
UCI Kimberly Champet
UCI Catilia Duran
UCI Eric Xiong
UCI Alexander Rantall
UCI Shania Caranto
UCI Teresa Lam
UCI Jan Cachero
UCI Alicia Teo
UCI Ritika Senthil Kumar
UCI Sophia Pirtle
UCI Hana Beydoun
UCI Abby Grossman
UCI Emma Johnson
UCI Alexis Beaton
UCI Jessica Zhou
UCI Elijah Tabachnik
UCI Syakirah Jamaludin
UCI Catherine Sanchez
UCI Brisa Guzman-Puente
UCI Brisa Guzman-Puente
UCI Elek Yozie

UCI Thoa Pham
UCI Kristen Chung
UCI Sidney Hong
UCI Jonathon Lopez
UCI Manuel Centeno
UCI Thomas Ramirez
UCI Samantha Lum
UCI Sean Kim
UCI Christina Rex
UCI Maximiliano Pichon
UCI Jorge Ponce
UCI Daniel Robert Ocampo
UCI Dominic Moy
UCI Samuel Chen
UCI Tobin Sia
UCI Steven Castellon
UCI Zicong Liu
UCI Cheuk Tung-Ashley
UCI Brianna Gholson
UCI Saysha Love
UCI Aadi Aarawal
UCI Kai Yakushko
UCI Ashton Creveline
UCI Sabrina Rashid
UCI Ryan Goldstein
UCI Monserrat Velazquez
UCI Adriana Zelaya
UCI Anaya Lewis
UCI Nicole Smith
UCI Haolong Yu
UCI Raw Meadows
UCI Jazmin Medina
UCI Marcus Koh
UCI Sumanth Pallamreddy
UCI Emily Song
UCI Haozhen Gu
UCI Uyen Nguyen
UCI Kevin Kienlen
UCI Yuning Chou
UCI Allison Serrano

CALPIRG

Students

UCI Samuel Kennedy
UCI Maleena Bhakta
UCI Kirjava Shade
UCI Gabrielle Olaso
UCI Viva Saraph
UCI Isabella Marcelo
UCI Angel Lcaellas
UCI Caitlin Va
UCI Maryam Parviniah
UCI Frances Smith
UCI Ava Rivas
UCI Siena Bernal
UCI Lucas Tam
UCI Luyong Yang
UCI Melissa Hernandez
UCI Ai Taguchi
UCI Alaina Asuncion
UCI Pnang Sung
UCI Vada Nguyen
UCI Anthony Luiu (kim?)
UCI Amber Escario
UCI Mayumi Advinoula
UCI Yousuf Rao
UCI Diya Karthikenyan
UCI Diana Garcia
UCI Bodhi Pon
UCI Bodhi Pon
UCI Saamantha Chang
UCI Patricia Martinez
UCI Anthony Ramos
UCI Sanail Amir
UCI Ali Khreddine
UCI Kimberly Champet
UCI Catilia Duran
UCI Eric Xiong
UCI Alexander Rantall
UCI Shania Caranto
UCI Teresa Lam
UCI Jan Cachero
UCI Alicia Teo

UCI Ritika Senthil Kumar
UCI Sophia Pirtle
UCI Hana Beydoun
UCI Abby Grossman
UCI Emma Johnson
UCI Alexis Beaton
UCI Jessica Zhou
UCI Elijah Tabachnik
UCI Syakirah Jamaludin
UCI Catherine Sanchez
UCI Brisa Guzman-Puente
UCI Brisa Guzman-Puente
UCI Elek Yozie
UCI Thoa Pham
UCI Kristen Chung
UCI Zixuan Feng
UCI Sean Lee
UCI Sidney Hong
UCI Jonathon Lopez
UCI Manuel Centeno
UCI Thomas Ramirez
UCI Samantha Lum
UCI Sean Kim
UCI Ricky Hwa
UCI Christina Rex
UCI Maximiliano Pichon
UCI Jorge Ponce
UCI Daniel Robert Ocampo
UCI Dominic Moy
UCI Samuel Chen
UCI Tobin Sia
UCI Steven Castellon
UCI Zicong Liu
UCI Cheuk Tung-Ashley
UCI Brianna Gholson
UCI Saysha Love
UCI Aadi Aarawal
UCI Kai Yakushko
UCI Ashton Creveline
UCI Sabrina Rashid

CALPIRG

Students

UCI Ryan Goldstein
UCI Monserrat Velazquez
UCI Adriana Zelaya
UCI Anaya Lewis
UCI Kevin Flores
UCI Nicole Smith
UCI Haolong Yu
UCI Raw Meadows
UCI Jazmin Medina
UCI Honglin Song
UCI Marcus Koh
UCI Ivan Avila
UCI Sumanth Pallamreddy
UCI Emily Song
UCI Haozhen Gu
UCI Uyen Nguyen
UCI Kevin Kienlen
UCI Yuning Chou
UCI Allison Serrano
UCI Samuel Kennedy
UCI Maleena Bhakta
UCI Kirjava Shade
UCI Gabrielle Olaso
UCI Viva Saraph
UCI Isabella Marcelo
UCI Angel Lcaellas
UCI Caitlin Va
UCI Maryam Parviniah
UCI Frances Smith
UCI Ava Rivas
UCI Siena Bernal
UCI Lucas Tam
UCI Luyong Yang
UCI Melissa Hernandez
UCI Ai Taguchi
UCI Alaina Asuncion
UCI Pnang Sung
UCI Aidan Visser
UCI Fabian Hernandez
UCI Hector Fonseca

UCI Brandon Vu
UCI Xinyue Hu
UCI Autumn Anderson
UCI Alicia Macdonald
UCI Amber Canty
UCI Connor Osullivan
UCI Sarah` Valdez
UCI Anvi Doshi
UCI Raseev Dudta
UCI Eshaan Punalekar
UCI Rohan Bhilegaonkar
UCI Lily Lai
UCI Ruben Vasquez
UCI Sakash Gupta
UCI Kenny Gutierrez
UCI Ethan Glaun
UCI Vanessa Cortes Casas
UCI Karly Kovaleff
UCI Vu Le
UCI Ryan Le
UCI Hamzah Mahmood
UCI Joshua Josah
UCI Angel Flores
UCI Lawson McCoy
UCI Victor Huang
UCI Sun Yang
UCI Adilene Morales
UCI Marina Sandoval
UCI Carlos Giovanni-Polanco
UCI Lan AnhTrinh
UCI Francisco Torres
UCI Lucia Cornejo
UCI Hugo Yu
UCI Melanie Moreno
UCI Shane Harris
UCI Samuel Chen
UCI Kat West
UCI Cai Chen
UCI Ruth Castillo
UCI Alexander Garcia

CALPIRG

Students

UCI Ayiana Grana
UCI Patrick Doan
UCI Ella Gregory
UCI Brooke Dresbach
UCI Natalie Gasreieur
UCI Frank Vega Mgjano
UCI Ian Gomez
UCI Jayna Miller
UCI Alex Zakoor
UCI Thomas Wunsih
UCI Jonathan Mekonnen
UCI Najasaad
UCI Ashley Villegas
UCI Ethan Hickey
UCI Eesha Eerpina
UCI Priscilla Contreras
UCI David Carteno
UCI Lavanya Manjunath
UCI Brandon Velasquez
UCI Shreya Thota
UCI Sara Alnasrallah
UCI Christopher Le
UCI Harry Liu
UCI Vedanta Khandai
UCI Jenny Wang
UCI Xiomara Pecson
UCI Katherine Rodas
UCI Shivani Patel
UCI Harry Chee
UCI Collin Tran
UCI Wells Katechis
UCI Shannie Luu
UCI Nathaniel Cobb
UCI Jade Niu
UCI Logan Gonzalez
UCI Krish Thakur
UCI Derrek Zaragoza
UCI Cate Maynard
UCI Valeria Yefimov
UCI Behzad Nawrooz

UCI Alexander Lou
UCI Alexander Michalet
UCI Anthony Ayala
UCI Emily Mendez
UCI Kadie Park
UCI Nathan Tam
UCI Berny Gasca
UCI Trinity Duong
UCI Savannah Gainsborough
UCI Tara Ozdemir
UCI Gage Babbitt
UCI Alyssa Gorman
UCI Jacqueline L
UCI Marissa Burney
UCI Zeya Heng
UCI Camille Kamkar
UCI Liam Henderson
UCI Claire Kuhn
UCI Jose Cox
UCI Belinda Castillo
UCI Dayrin Villanueva
UCI Jimmy Alvarez
UCI Sariyan Stevenson
UCI Elena Paler
UCI Taylor Hart
UCI Summer Moore
UCI Cesar Suy
UCI Francisco Carlos
UCI James Martinez
UCI Humbert Diaz
UCI Aung Bang
UCI George Nasir
UCI Ashton Marcos Mateo
UCI David Mapplegate
UCI Jakob Groh
UCI Rachel Friar
UCI Andrew Covarrubiar
UCI Wendy Fletez
UCI Jolyne Fuentes
UCI Marc Gonzalez

CALPIRG

Students

UCI Ze Han
UCI Ana Camino
UCI Mariposa Duran
UCI Calista Law
UCI Ap Siddiqui
UCI Brianna Gomez
UCI Dakota Shepherd
UCI Isha Kotalwar
UCI Nicole Silvers
UCI Olive Kant
UCI Lola Martinez Sanchez
UCI Gloria Hernandez
UCI Heidi Van Ness
UCI Mohammad Hamzah Zaidi
UCI Adrian Mireles
UCI Myleigh Slom
UCI Salim Alshehri
UCI Abraham Dagnachew
UCI Cheol Park
UCI Abir Hingorani
UCI Maximillian Roger
UCI Rebecca Martinez
UCI Gloria Martinez
UCI Sebastian Castro
UCI Timothy Hylico
UCI Chris Kim
UCI Kaiden Gillam
UCI Abril Montellano
UCI Monica De La Torre
UCI Janita Ikram
UCI Eduardo Diaz
UCI David Gao
UCI Gwyheth Martin
UCI Alejandra Hernandez
UCI Jade Rodriguez
UCI Issac Jardon
UCI Charlotte Huang
UCI Amy Vera
UCI Theo Benhabiles
UCI Zalna alayyan

UCI
UCI Alrick Buscato
UCI Isabel Larazo
UCI Devin Xia
UCI Zamanethzive Granadas
UCI Makhaila Povtev
UCI Zachary McDaniel
UCI Acacia Ngo
UCI Scoty Sibcey
UCI Hanna Baterina
UCI Aydin Oleary
UCI Natalie Choy
UCI Sina Yazdani
UCI Justin Dawn
UCI Elin Babakhanian
UCI Samira Ahmad
UCI Luke Nunez
UCI Aaitya Patel
UCI Fernando Godines
UCI Alexander Sadiursky
UCI Lizbeth Hernandez
UCI Kaihao Lin
UCI Bryant Nguyen
UCI Jennifer Nguyen
UCI Maia Niemen
UCI Elyse Cheng
UCI Ethan Nguyen
UCI Byron Vargas
UCI Arnav Harsh
UCI Alex Manukyan
UCI Ophelia Yeung
UCI Marren Cheong
UCI Tianding He
UCI Derik Zhu
UCI Manal Iqbal
UCI Ryan Tran
UCI Carlos Cocar
UCI Matthew Saian-shin
UCI Noah Kim
UCI Andrew Wilt

CALPIRG

Students

UCI Gabriela De Robles
UCI Brianna Flores
UCI Emily Ballesteros
UCI Nathaniel Yee
UCI Zilin Xiang
UCI Paul Iida
UCI Jadan Gilb
UCI Edgar Avalos
UCI Charles Abe
UCI Marianne Corpuz
UCI Myles A Mccord
UCI Emmanuel Veliz
UCI Megan Harrison
UCI Trisha Asuncion
UCI Gayathri Pillai
UCI Andrew Berberian
UCI Chance Lim
UCI Austin Delger
UCI Ethan Huang
UCI Lily Diaz
UCI Olivia Amaral
UCI Gianna Carlino
UCI Praveen Swaminarayan
UCI Marisol Ibarra
UCI Arshia Hassan
UCI Erik Fuentes
UCI Alex Yeh
UCI Logan Walther
UCI Yiyang Guo
UCI Aniruoh Mandala
UCI Carolina Vivianasilva
UCI Melany Navarro
UCI Jaeyun Kim
UCI Megan Sin
UCI Ashley Jauregui
UCI Juventino Bonaparte
UCI Tzu-Chin Chen
UCI Shreya Jagannathan
UCI Elias Franklin
UCI Angelina Depriest

UCI Rayana Huq
UCI Yingxuan Cheu
UCI Lily Dorval
UCI Ananya Prakash
UCI David Salinas
UCI Aniruoh Mandala
UCI Allan De La Cruz
UCI Sasha Hernandez
UCI Chelsea Yuen
UCI Bailey Michaelian Marks
UCI Sylvia Huang
UCI NATalie Nguyen
UCI Cristopher Olvera
UCI Ashley Ramos
UCI Stephanie Garcia
UCI Isaac Mitchell
UCI Derek Barker
UCI Morgan Carter
UCI Brianna Kallie
UCI Aysel Franco
UCI Sophia Ellis
UCI Deeksha Cirigadi
UCI Sanskriti Singh
UCI Ai Huynh
UCI Lia Rosas
UCI Reyna Borillo
UCI Amari Katagiri
UCI Kinsey Nelson
UCI Pedro Betto
UCI Chareles Navarro
UCI Stefany Ruan
UCI Chuyue Jiang
UCI Solana Leonard
UCI Anthony Agnen
UCI Paige Shepler
UCI Sophia Cheung
UCI Gabriel Lucero
UCI Aiden Worthington
UCI Rachel Ho
UCI Saige Frausto

CALPIRG

Students

UCI Mia Natividad
UCI Palwasha Hasan
UCI Sebastian Frye
UCI Viviana Maravilla
UCI Yuhan Jia
UCI Jonas Caver
UCI Jeremiah Dominguez
UCI Lillian Tann
UCI Angel Hernandez
UCI Yahaira Valdovinos
UCI Audrey Nguyen
UCI Jose Bravo
UCI Yen Hang
UCI Thao Tran
UCI Sophia Castro
UCI Cameron Baker
UCI Miles Gardin
UCI Daniela Estevez
UCI Desiree Lopez
UCI Cassandra Hervas
UCI Gretchen Paek
UCI Jamie Lee
UCI Chataine Ramos
UCI Tracy Sandoval
UCI Karen Gerges
UCI Anastasia Malaspina
UCI Ivy Che
UCI Jesus Flores
UCI Alicia Lee
UCI Kenneth Phan
UCI Naomi Miranda
UCI Darid Mattle
UCI Vincent Bui
UCI Jessica Hh
UCI Rosaxu
UCI Samantha Soltero
UCI Alison Nguyen
UCI Daniel Jackson
UCI Brigitte Medina
UCI Audreanna An San

UCI Isabella Lanuza
UCI Jamie Rawn
UCI Christrian Eid
UCI Tzu-Chng Yang
UCI Caitlyn Douglas
UCI Diego Lopez
UCI Landyn Drapp
UCI Olivia Heim
UCI Alishba Aryan
UCI Guadalupe Holguin
UCI Joseph Jang
UCI Kaitlin Otsuka
UCI Jaiminh Park
UCI Kayla Haliczzer
UCI Karla Tinoco

CALPIRG

Students

UC San Diego Students

UCSD Kristian Rabben Bautz-Holter
UCSD Raymond Lim
UCSD Ian Lin
UCSD Sydney McDonald
UCSD Thomas Hong
UCSD Sophia Wang
UCSD Max Kelly
UCSD Yichi Yang
UCSD Fei Yueh
UCSD Edgar Sanchez
UCSD Nyleen Reyes
UCSD Catherine Lian
UCSD Jacob Tidwell
UCSD Trevor Ryan
UCSD Rose Xiong
UCSD Fernando Garduno
UCSD Michael Berlin
UCSD Eric Zhang
UCSD Josilgan de Martino
UCSD Bright Ekhuaguer
UCSD Lucas Mosca
UCSD Timmy
UCSD Victoria Couillard
UCSD Kekoa Ortiz
UCSD Michael Malfatti
UCSD Emily Tinoco
UCSD Abhi Sachdeva
UCSD Ellie Kim
UCSD Riti Wadwa
UCSD Pranav Gopac
UCSD Eva York
UCSD Benjamin Kraus
UCSD Thrisha Praveen
UCSD Micah Kim
UCSD Catalina Jones
UCSD Caren Aguirre
UCSD Ethan Gurevich
UCSD Sofia Matson

UCSD Emilie Lim
UCSD Cole Spalding
UCSD Carly Ann Magpantay
UCSD Alex Ayala
UCSD Diego Lopez
UCSD Ken Vandeventer
UCSD Karina Oquendo
UCSD Louis Avalos
UCSD Stephen Walsh
UCSD Marisol Paulino
UCSD Vivian Nguyen
UCSD Aldrin Cheung
UCSD Sophia Pless
UCSD Ian Johnston
UCSD Benjamin Taylor
UCSD Sriram Sidartan
UCSD Irving Lopez
UCSD Jackson Burchard
UCSD Melanie Hernandez
UCSD Ayca Bocaya
UCSD Arlene Nagtalon
UCSD Mason Chevalier
UCSD Ezekiel Martin
UCSD Joshua Shen
UCSD Relann Santos
UCSD David Sun
UCSD Tyler Meyers
UCSD Johan Jaimez
UCSD Shreyas Sankaranaray
UCSD Anvi Mittal
UCSD William Miller
UCSD Aditi Jain
UCSD Kathryn Moran
UCSD Lauren Rocco
UCSD Jorge Lozoya
UCSD Allison Cross
UCSD John Smith
UCSD Satvik DBandi
UCSD Brandon Mah
UCSD Lorin Culanding

CALPIRG

Students

UCSD Louise Rodil
UCSD Elin Helmy
UCSD Samantha Sutton
UCSD Brednan Cocos
UCSD Harsh Savla
UCSD Yesenia Preciado
UCSD Valeria Vega
UCSD Emely Rivera
UCSD Geovanna Garza
UCSD Kay Labbe
UCSD Hannah Petyt
UCSD Noel Garcia
UCSD Monique Kirland
UCSD Drew Jarding
UCSD Nancy Liu
UCSD Ciara Auran
UCSD Jorge Flores
UCSD Nandini Desai
UCSD Yael Sela
UCSD Charlotte Chung
UCSD Emerald May-Woodruff
UCSD Kylie Hickey
UCSD Aliana Testa
UCSD Ryan Henry
UCSD Sumit Sandhu
UCSD Dalton Nguyen
UCSD Brisa Blomquist
UCSD Nadia Celayo Carrillo
UCSD Giovanni Rodriguez
UCSD Joachim Galil
UCSD Ava Kam
UCSD Shanlin Qian
UCSD Patricia Shyn
UCSD Anshul Wadhvani
UCSD Sabine Wood
UCSD Paris Aguilar Ul'loa
UCSD Aarya Patel
UCSD Matilda Gaddi
UCSD CJ Hochbrueckner
UCSD Ioanna Andritsogianni

UCSD Doris Rodriguez
UCSD Kiana Poz
UCSD Eduardo Sanchez
UCSD Janelie Chavez
UCSD Nadia Martinez
UCSD Benjamin Cravatt
UCSD Evelyn Romero
UCSD Briana Maldonado
UCSD Angela Demetrio
UCSD Nadine Arguelles
UCSD Pan Li
UCSD Pablo Dollero
UCSD Jenifer Santiago
UCSD Justine Kroll
UCSD Star Nkemere
UCSD Baoyi Wan
UCSD Vivaan Patel
UCSD Arlene Luna
UCSD Shubh Gupta
UCSD Iernanda Ramirez
UCSD Kassidy Payne
UCSD Angelica Milar
UCSD Esmeralda Garcia
UCSD Abigail Lewis
UCSD Erick Heredia
UCSD Mehak Gupta
UCSD Brenda Martinez
UCSD tyler tieu
UCSD Catnni Kim
UCSD Kaitly Aguilar
UCSD Mahi Goyal
UCSD Roxanne Fan
UCSD Nikolas Malek
UCSD Emilee Ortiz
UCSD Noelle Enerson
UCSD Ryder Leff
UCSD Rohan Upalekar
UCSD Priscilla Lin
UCSD Owen Yang
UCSD Nilufar Enya

CALPIRG

Students

UCSD Tyler Fairbanks
UCSD Christain Carter
UCSD Andrew chen
UCSD elhadji seck
UCSD Anudama Nambiar
UCSD Ariane Tulwatte
UCSD Kaitlyn Lam
UCSD Are-Ana Carter
UCSD Ethan Newell
UCSD Luke Tae
UCSD Joaquin Mena Jr
UCSD Logan Reid
UCSD Lorraine Bokbarde
UCSD Daphne Nguyen
UCSD Larissa Yang
UCSD Alyxandra Kuykendoll
UCSD Sofie Blazejova
UCSD Kate Friess
UCSD Capri Russell
UCSD Alexis Gonzalez
UCSD Joshua Barraza
UCSD Elektra Harris
UCSD Ella Morris
UCSD Hayden Prescott
UCSD Angel Becerra
UCSD Arunan Senthil
UCSD Chensong Zia
UCSD Suveeha Suresh
UCSD Joe Alturki
UCSD Brian Le
UCSD Adam Ramirez
UCSD Aditya Kakkad
UCSD Alex Mueller
UCSD Viviana Tirado Robles
UCSD Garret Christic
UCSD Priscilla Rau
UCSD Varunika Israni
UCSD Fiala Klimowski
UCSD Supicha Songpetchmongkol
UCSD Manav Singh Ahluwalia

UCSD Guadalupe Santos
UCSD Ryan Manshadi
UCSD Yeimi Rodriguez-Hern
UCSD Emily Cai
UCSD Alysh Mercer
UCSD Adriana Estrada
UCSD Aurelia Rachman
UCSD Gradelle Capistrano
UCSD Sophia Schafer
UCSD Micah Rivera
UCSD Sabrina Abdurakhmonova
UCSD Emmanuelle Lalande
UCSD Addyson Teehan
UCSD Sasha Banaei
UCSD Loden Azure
UCSD Yiai Huang
UCSD Isaac Diaz
UCSD Manuel Tamares
UCSD Jiya Makhija
UCSD Mikaela Rivera
UCSD Brinlyn Gonzales
UCSD Sumehra Ali
UCSD Leo Costanza
UCSD Summer Simboli
UCSD Nico Cruz
UCSD Lira Glankler
UCSD Emmett Torpey
UCSD Alex Kelly
UCSD Lilian Ta
UCSD Dianna Torres Arias
UCSD Kazuki Girand
UCSD Michaela Chung
UCSD Rosa Rodriguez
UCSD Aryan Umesh
UCSD Bendavid Maimon
UCSD Angelina Kim
UCSD Sophia Viorato
UCSD Ryan Kim
UCSD Jesse Gonzalez
UCSD Gavin Whitney

CALPIRG

Students

UCSD Rayza Padilla
UCSD Jemma Ceja
UCSD Kimberly Jeronimo
UCSD Vianna Le
UCSD Emily Lopez
UCSD Daniel Chung
UCSD Angel Cortez
UCSD Mathew Martinez
UCSD Steven F. Aguirre
UCSD Thomas Cho
UCSD Albert Chen
UCSD Anastasia Caruso
UCSD Leksi Chen
UCSD Arush Khan
UCSD Levi Melara
UCSD Gauthier Bodet
UCSD Alexander Victor
UCSD Ericka Garcia
UCSD Bella Reyes
UCSD Matthew Heredia
UCSD Abby Bentler
UCSD Thomas Deitel
UCSD Edrin Cayle David
UCSD Malika Charles
UCSD Keith Faustino
UCSD Rabiya Chaudry
UCSD Kenneth Sotomayor
UCSD Ashvin Chaudhary
UCSD Levin Arst
UCSD Noor Khalil
UCSD Sofia Guzman
UCSD Ayk Petrosyan
UCSD Danae Kelley
UCSD Meghan O'Donnell
UCSD Seini Petelo
UCSD Kimberlee Trinh
UCSD Arturo Avalos
UCSD Payton Line
UCSD Michelle Tan
UCSD Corinne Dalley

UCSD Paige White
UCSD Elen Hovhannisyan
UCSD Rei Shobuya
UCSD Vanessa Tello
UCSD Delaney Golloian
UCSD Marisol Zamora
UCSD Isabella Portillo
UCSD Samira Ruiz
UCSD Annika Brown
UCSD Jeevan Karandikar
UCSD Anahi Cuin
UCSD Beverly Mei
UCSD Alex Nguyen
UCSD Samyukta Chittoor
UCSD Adam Roth
UCSD Adora Pitcock
UCSD Ali Mohamed
UCSD Nick Habibi
UCSD Maricela Dicupe
UCSD Emily Dayanghirang
UCSD Christian Paddie
UCSD Ricardo Martinez
UCSD Ethan Schulze
UCSD Zach Schmid
UCSD Annabelle Davis
UCSD Aditya Warriar
UCSD Emily Ayaa Gonzalez
UCSD Beliz Akbulut
UCSD Levia Longenecker
UCSD Angelina Lui
UCSD Kaitlyn Saucedo
UCSD Carlos Castro
UCSD Matthew Mowge
UCSD Claire Lee
UCSD Maya Barnovitz
UCSD Joshtyn Hurtado
UCSD Cade Nahama
UCSD Nicolas Fender
UCSD Karen Navarro
UCSD Antonio Ceron

CALPIRG

Students

UCSD Adrian Arellano
UCSD Cooper Leuinson
UCSD Anokkhi Shah
UCSD Sofia Gonzalez
UCSD Jules Tegel
UCSD Kimberly Cruz
UCSD Isabella Loiselle
UCSD Tonantzin Orozco
UCSD Anjali Edmonds
UCSD David Perez
UCSD Paola Lopez
UCSD Katalina Cohedy
UCSD Liam Wood
UCSD Pamela Aguirre
UCSD Manny Zhou
UCSD Teegan Dunham
UCSD Leopold Netzer
UCSD Valleria Arteaga
UCSD Ava Bolster-Hunter
UCSD Jasmine Ebalo
UCSD Chibunze Lideh
UCSD Hero Davis
UCSD Brendan Barber
UCSD Jesus Michel
UCSD David Perez - Olguin
UCSD Nandi Dogani
UCSD Stella Dorsey
UCSD Laura Arrizon
UCSD Lucia Arrizon
UCSD Angelica Arguilla
UCSD Reba Gamson-Knight
UCSD Kavya Suresh
UCSD Kai Body
UCSD Clement Chen
UCSD Stuti Goel
UCSD Alma Moncada
UCSD William Baxer
UCSD Jessica Luna
UCSD Jimmy Trujillo
UCSD Feng-Ming Kuo

UCSD Alana Avila
UCSD Jenny Fu
UCSD Elly Mate
UCSD Apoorva Ramachandran
UCSD Rhean Sabio
UCSD Shawn Delaware
UCSD Chloe Wong
UCSD Diego A. Reymoso
UCSD Elizabeth Nurkhalter
UCSD Ananya Bajaj
UCSD Kilala Mei
UCSD Yicin Chiu
UCSD Sia Mehta
UCSD Mariaelisa Agredano
UCSD Sofia Kurtin
UCSD Himda Bulusu
UCSD Chelzee Nicole Yu
UCSD Jasmine Grimes
UCSD Jessica Biller
UCSD Suen Andersen
UCSD Sky Roman
UCSD Drew Shipwash
UCSD Gabriel Youmans
UCSD Ian Lee
UCSD Eduard Basila
UCSD Milla Kay
UCSD Kira Ornelas
UCSD Sarah Nguyen
UCSD Kevin Datiles
UCSD Alex Vergara
UCSD Gurleen Kaur Ghuman
UCSD Priscilla Duenas
UCSD Isabella Drouillard
UCSD Gwendolyn Tran
UCSD Melody Gao
UCSD Ishmal Nasir
UCSD Chista Irani
UCSD Lauren Lau
UCSD Fiona Thomas
UCSD Nicholas Rivas

CALPIRG

Students

UCSD Trang Nguyen
UCSD Kylee Helseth
UCSD Phosaykeo Veopadith
UCSD Mirriele
UCSD Victoria Loya
UCSD Dana Smith
UCSD Nick Selchau
UCSD John Ecdao
UCSD Brenda Hernandez
UCSD Michelle Bae
UCSD Jacqueline Duran
UCSD Zarela Navarro
UCSD Alaysa Retonel
UCSD Winnie Chen
UCSD Gor Abaghyann
UCSD Citlali Rios Sanchez
UCSD Emma Ortiz
UCSD Heather Meadows
UCSD Jennifer Serna
UCSD Clara Manzo
UCSD Carlos Buelna
UCSD Joshua Fong
UCSD Gyan Schloyer
UCSD Danny Ezquivel
UCSD Audrey Shapiro
UCSD Dylan Price
UCSD Olivia Gonzalez
UCSD Banok Tesfay
UCSD Yahir Cervantes
UCSD Valery Plata
UCSD Lehman Hu
UCSD Chloe Lee
UCSD Alexander Miller
UCSD Emily Ramos
UCSD Mya Aurelio
UCSD Shaun Israni
UCSD Ajay Singh
UCSD Alejandro Luna
UCSD Giulia Pesenti
UCSD Anthony Vargas

UCSD Aditi Prakash
UCSD Selwyn Transito
UCSD Amber Guerra
UCSD Paola Ortiz
UCSD Jay Keshava
UCSD John Jerez Alvarez
UCSD Aimee Salazar
UCSD Ava Serrato
UCSD Megan Choe
UCSD Meghan Choe
UCSD Henry
UCSD Julius Villalobos
UCSD Hollis Voinov
UCSD Jade Rojas
UCSD Tiffany Hsiao
UCSD Samy Laqlach
UCSD Derien Cardenas
UCSD Taylor Smith
UCSD Tommy Nguyen
UCSD Kenneth Rodriguez
UCSD Arielle Timtiman
UCSD Charu Srinath
UCSD Kevin Gama
UCSD Gabriela Hernandez
UCSD Jessie (Jiaxi) Hu
UCSD Kunj Patel
UCSD Hiram Anulo
UCSD Brett Corpuz
UCSD Linnean Smith
UCSD Branda Gorgies
UCSD Jessica Soto
UCSD Yunxin Li
UCSD Natasna Buchler-Fosado
UCSD Ralph Inaki Valdez
UCSD Abdallah Ahmed
UCSD Abduh Kahman Alajadi
UCSD Kenneth Jones
UCSD Claire Cover
UCSD Logan King
UCSD Sharika Page

CALPIRG

Students

UCSD Noa Larios
UCSD Matias Alatorre
UCSD America Parra
UCSD Asai Aguilar Perez
UCSD Kengi Xiong
UCSD Evelyn Chou
UCSD Julie Salas
UCSD Kevin Manshadi
UCSD Bashar Abdulahad
UCSD Kevin Zhen
UCSD Mary Rincker
UCSD Brandy Mones
UCSD Clytie Huey
UCSD Christopher Schrievers
UCSD Riley Alphabet-Blair
UCSD Ansh Mishra
UCSD Lizbeth Moralales
UCSD Alivia Gao
UCSD Lyssa Lashus
UCSD Anastasia Ellison
UCSD Shalm Mendez
UCSD Justin Goldman
UCSD Ethan Lee
UCSD Gwenyvere Jones
UCSD Vivian Moreno
UCSD Lucas Ocampo
UCSD Ivy Pavva Gutierrez
UCSD Gracie Xu
UCSD Nicole Pawlak
UCSD Markus Obata
UCSD Yome Bishop
UCSD Tanner Rall
UCSD Pho Onaya Chi
UCSD Chris Tobias
UCSD Azizah Anekwe
UCSD Vivian Lua
UCSD Taylor Wright
UCSD Arianna Bonesteel
UCSD Tiffany Tran
UCSD Christine Shulepon

UCSD Jessica Boshell
UCSD hannah parcutilo
UCSD Backur Quhart
UCSD Natalya Phillips
UCSD Jose M Ramirez
UCSD Dani Nguyen
UCSD Kaylina Murphy
UCSD Sebastian Rock
UCSD Aidan Sterling
UCSD Tracy Fay
UCSD Dara Watkins
UCSD Wako Koshitaka
UCSD Ricardo Miranda
UCSD Jesus Ramos
UCSD Ellymia Ngugen
UCSD Larissa Casarez
UCSD Emma Baker
UCSD Ella Centeno
UCSD Aaron Barber
UCSD Bao To
UCSD Gorkhac Hatryan
UCSD Tanisha Martinez
UCSD Inaya Siddiqui
UCSD Sylvia Tsai
UCSD Kevin Garvais
UCSD Scott Herzog
UCSD Thanh Nguyen
UCSD Yerang Shin
UCSD Alexa Reyes
UCSD Briana Roberts
UCSD Milana Parehjan
UCSD Laurel Foster
UCSD Jacquelyn Paigne
UCSD Lukas Campan
UCSD Jose Batalla
UCSD Garrett Holt
UCSD Makenna Heisler
UCSD Shelsea Ramirez
UCSD Kayla Loera
UCSD Tyler Van Noord

CALPIRG

Students

UCSD Ian Filali
UCSD Vaishali Mehta
UCSD Kayla Ker
UCSD Agumbirsingh Chahal
UCSD Gregory Peregrin
UCSD Sergio Gutierrez
UCSD Joey Burgess
UCSD Gabriel Maayah
UCSD ezra sheldon
UCSD Reina Salman
UCSD Ken Juan
UCSD Victor Lomelli
UCSD Iman Syed
UCSD Julie Lara
UCSD Ericka Mariscal Mora
UCSD Reed Samuels
UCSD Ryoto Lamaucho
UCSD Serina Swan
UCSD Johannah Roth
UCSD Zachary Taylor-Hunt
UCSD Anu Venkatesh
UCSD Daeilynna caradona
UCSD Nikitha Mateti
UCSD Nathaniel Hwang
UCSD Daniel Spagna
UCSD Daniel Pagna
UCSD Maria Luisa Seitz
UCSD Sarah Poliza
UCSD Ryan Kasem
UCSD Heather Jeou
UCSD Sabrina Ma
UCSD Lola Rosenblum
UCSD Ranbir Bakshi
UCSD James Wright
UCSD Adam Zhang
UCSD Hanna Sun
UCSD Kobe Su
UCSD Keyu Jin
UCSD Lyena Monis
UCSD Cynthia Deng

UCSD Salma Hetwally
UCSD Pranav Kulkarni
UCSD Mhone Bogonko
UCSD Abigail Kapur
UCSD Kaylin Chan
UCSD Emma Naca
UCSD Caterina Ranieri
UCSD Joshua Morales
UCSD Stephanie Cesena
UCSD Michelle Smith
UCSD Somak Maitra
UCSD Keshav Gupta
UCSD Xiangwei Huang
UCSD Surn Jones
UCSD Ishita Chawla
UCSD Ashley (Ningjia) Xu
UCSD June Akpata
UCSD Qiurui Tian
UCSD Shayan Boghani
UCSD Caroline Zhang
UCSD Krista Vear
UCSD Haemanth Velmurugan
UCSD Parinaz Asareh
UCSD Zixiao Yan
UCSD Feennette Navarro
UCSD Kaiya MacLeod



Dear Gov. Newsom and California officials,

As decades of pollution, industrial-scale fishing, and climate change threaten the ocean, I urge you to support expanding California's marine protected areas to provide safety for marine wildlife. Please protect the state's last remaining kelp forests and strengthen enforcement in existing marine protected areas.

With your leadership, California can create a safe harbor for wildlife, including sea otters, shore birds, and sea turtles. And our state can continue to lead the country and the world in ocean conservation.

Sincerely,

Assembly District 2

Manley, Sebastopol,CA,95472

Andrew Cook, Sebastopol,CA,95472

Tyson Dickinson, Sebastopol, CA,95472

Gary Pace, Sebastopol,CA,95472

Raleigh Elliott, Sebastopol,CA,95472

Mark Allen, Sebastopol,CA,95472

Jacob Paradise, Sebastopol,CA,95472

Darryl Bush, Sebastopol,CA,95472

Wilbert Brown, Sebastopol,CA,95472

Tom Moore, Sebastopol,CA,95472

Michael Brandt, Sebastopol,CA,95472

David Banks, Sebastopol,CA,95472

James Brown, Sebastopol,CA,95472

Stephen Lebbert, Sebastopol,CA,95472

Ed Bauman, Sebastopol,CA,95472

Nick Stewart, Sebastopol,CA,95472

William Offermann, Sebastopol,CA,95472

Samson Geller, Santa Rosa,CA,95404

Robert Hartman, Santa Rosa,CA,95404

Jon Stong, Santa Rosa,CA,95404

Ellen Hanson-Harris, Sebastopol,CA,95472

Amy Waterman, Santa Rosa,CA,95404

Carol Buckner, Santa Rosa,CA,95404

Megan Hernandez, Santa Rosa,CA,95404

Sara Jones, Santa Rosa,CA,95404

Cynthia Miller, Santa Rosa,CA,95404

Cindy Bishop, Santa Rosa,CA,95404

Erin Moilanen, Santa Rosa,CA,95404

Pam Zimmerman, Santa Rosa,CA,95404

Sabrina Kniffin, Sebastopol,CA,95472

Monique Rubin, Sebastopol,CA,95472

Wendy Martin, Sebastopol,CA,95472

Janet Weinberger, Sebastopol,CA,95472

Jennifer Prowell, Sebastopol,CA,95472

Karri Haven, Sebastopol,CA,95472

Linda Inman, Sebastopol,CA,95472

Janet Vail, Sebastopol,CA,95472

Diane Whitney, Sebastopol,CA,95472

Pamela Hill, Sebastopol,CA,95472

Sheila Reilly, Sebastopol,CA,95472

Teresa Baumgardner, Sebastopol,CA,95472

Theresa Dintino, Sebastopol,CA,95472

Carmen Ferraz, Sebastopol,CA,95472

Kay Gordy, Sebastopol,CA,95472

Keri Kaminsky, Sebastopol,CA,95472

Karin Holsinger, Sebastopol,CA,95472

Barbara Buchignani, Sebastopol,CA,95472

Victoria MacDonald, Sebastopol,CA,95472

Virginia Matthews, Sebastopol,CA,95472

Victoria Van Tassell, Sebastopol,CA,95472

RebeccaKostyal Keyser, Sebastopol,CA,95472

Sunny Galbraith, Sebastopol,CA,95472

Irene Griggs, Sebastopol,CA,95472

Kimberly McCormick, Sebastopol,CA,95472

Beverly Bertaina, Sebastopol,CA,95472

Elizabeth Phegan, Sebastopol,CA,95472

Marcia Robb, Sebastopol,CA,95472

Alissa Coenen, Sebastopol,CA,95472

Stephanie Forsythe, Sebastopol,CA,95472

Kalima Rose, Sebastopol,CA,95472

Johnathan Greenburg, Sebastopol,CA,95472

Sally Lambert, Sebastopol,CA,95472

Brenna Adams, Sebastopol,CA,95472

Rob Wallace, Sebastopol,CA,95472

Gale Brownell, Sebastopol,CA,95472

Davy Figaro, Sebastopol,CA,95472

Oscar Villicaña Lopez, Sebastopol,CA,95472

Manie Steyn, Sebastopol,CA,95472

Assembly District 4

Chris Pedersen, Sonoma,CA,95476

Douglas Bates, Sonoma,CA,95476

Richard Phoenix, Napa,CA,94558

Mary Devine, Napa,CA,94558

Sarah Fernald Loft, Napa,CA,94558

Cristina Young, Napa,CA,94558

Sharyn Barthes, Napa,CA,94559

Julie Bloomberg, Napa,CA,94559

Dianne Weyna, Napa,CA,94559

Ann Iverson, Sonoma,CA,95476

Laurie Glover, Sonoma,CA,95476

Claudine Sweeters, Sonoma,CA,95476

JoAnn Consiglieri, Sonoma,CA,95476

Patricia Bongiovanni, Sonoma,CA,95476

Susan Fitzgerald, Sonoma,CA,95476

Amy Gallagher, Sonoma,CA,95476

Patty Mohar, Sonoma,CA,95476

Aimee Bruederle, Sonoma,CA,95476

Bill Clark, Santa Rosa,CA,95404

Jon Martinez, Santa Rosa,CA,95404

Brooke Banks, Chico,CA,95928

Cameron Tuttle, Sonoma,CA,95476

Josh Atkins, Sonoma,CA,95476

Constanitae Petros, Sonoma,CA,95476

William Rivera, Napa,CA,94558

Assembly District 6

Colin Miller, Sacramento,CA,95818

Jim Wilson, Sacramento,CA,95818

Russ Hanson, Sacramento,CA,95818

Steven Keil, Sacramento,CA,95818

Steven Nawrath, Sacramento,CA,95818

Lee Anderson, Sacramento,CA,95818

Libby Bullock, Sacramento,CA,95818

Stella Mendoza, Sacramento,CA,95818

Jill Telfer, Sacramento,CA,95818

Shelly Wickwire, Sacramento,CA,95818

Mary Alford, Sacramento,CA,95818

Molly Sarkisian, Sacramento,CA,95818

Karen Andrus, Sacramento,CA,95818

Sally Smith, Sacramento,CA,95818

Maureen Campbell, Sacramento,CA,95818

Lisa Stie, Sacramento,CA,95818

Marc Krichman, Sacramento,CA,95818

Susan Popp, Sacramento,CA,95818

Helen Nusbaum, Sacramento,CA,95818

Anne Katten, Sacramento,CA,95818

Maria Shields, Sacramento,CA,95818

Margaret Brown, Sacramento,CA,95818

Kelly Santos, Sacramento,CA,95818

David Becker, Sacramento,CA,95818

The Keiners, Sacramento,CA,95818

Mary Curran, Sacramento,CA,95818

Terry Stigge, Sacramento,CA,95818

Alec Martin, Sacramento,CA,94205

Assembly District 11 & 12

Elizabeth McClelland-Beck, Vallejo,CA,94590

Mark Henderson, Larkspur,CA,94939

Jennifer Walker, Larkspur,CA,94939

Greg Bell, San Anselmo,CA,94960

Douglas Holm, San Anselmo,CA,94960

Paul Shaw, San Anselmo,CA,94960

Jules Gitelman, San Anselmo,CA,94960

Geoff Greenlee, San Anselmo,CA,94960

Joshua Powers, San Anselmo,CA,94960

Ryan Simone, San Anselmo,CA,94960

Eric Dorfman, San Anselmo,CA,94960

Frank Dingfelder, Novato,CA,94945

Lauren Vreeland-Long, Novato,CA,94945

David Hoff, Novato,CA,94945

Mike Foley, Novato,CA,94945

Mike Betts, Novato,CA,94945

Peter Pennypacker, Novato,CA,94945

Brian Martin, Novato,CA,94945

Julie McCue, San Anselmo,CA,94960

Jeff Sterley, San Anselmo,CA,94960

Mario Diaz, San Anselmo,CA,94960

Bob Fairchild, San Anselmo,CA,94960

Quincy Kowolik, San Anselmo,CA,94960

Steven Hernandez, San Anselmo,CA,94960

Robert Howard, San Anselmo,CA,94960

Ned Farnkopf, San Anselmo,CA,94960

Sean Condry, San Anselmo,CA,94960

Bob Gelber, San Anselmo,CA,94960
Stephen Mcgee, San Anselmo,CA,94960

Larry Golemon, San Anselmo,CA,94960
David Fee, San Anselmo,CA,94960
Matthew Noel, San Anselmo,CA,94960
Edward Asseltine, San Anselmo,CA,94960

Kevin Lozaw, San Anselmo,CA,94960
Victor Magnotti, San Anselmo,CA,94960
Nancy Soforenko, San Anselmo,CA,94960

Greg Murphy, San Anselmo,CA,94960
Scott Johnston, San Anselmo,CA,94960
Mark Chambers, San Anselmo,CA,94960

Keith Cronk, San Anselmo,CA,94960
Jonathan Hyman, San Anselmo,CA,94960

Tim Heiman, San Anselmo,CA,94960
Durnell Family, San Anselmo,CA,94960
Wayne Lee, San Anselmo,CA,94960
Tom Bemis, San Anselmo,CA,94960
Sheldon Matthys, San Anselmo,CA,94960

Al Reed, San Anselmo,CA,94960

Robert Bruce, San Anselmo,CA,94960
Bryan Fong, San Anselmo,CA,94960
Randy Field, San Anselmo,CA,94960
Paul Colardo, San Anselmo,CA,94960
Bill Engelhardt, San Anselmo,CA,94960
Audrius Reskevicius, San Anselmo,CA,94960

Steven Dewitt, San Anselmo,CA,94960
Michael Frideger, San Anselmo,CA,94960

Dan Deffner, San Anselmo,CA,94960
Marc Santmyers, San Anselmo,CA,94960

Charles Ingrasci, San Anselmo,CA,94960

Matt Ehlen, San Anselmo,CA,94960
Richard Burns, San Anselmo,CA,94960
Michael J. Collins, San Anselmo,CA,94960

John Flynn, San Anselmo,CA,94960
Bruce Fabric, San Anselmo,CA,94960
William Hudson, San Anselmo,CA,94960

Thomas Jensen, San Anselmo,CA,94960

Philip Milazo, San Anselmo,CA,94960

Richard Hymns, San Anselmo,CA,94960

Dirk Weiss, San Anselmo,CA,94960

Scott Kaiser, San Anselmo,CA,94960

Casey Cowgill, San Anselmo,CA,94960

James Goetz, Novato,CA,94945

Ronny Knight, San Rafael,CA,94903

Brad Honsberger, San Rafael,CA,94903

Wes Womack, San Rafael,CA,94901

Jeffrey French, San Rafael,CA,94901

Ira Levy, San Rafael,CA,94901

Craig Laviano, San Rafael,CA,94901

Garrett Burdick, San Rafael,CA,94901

David Peterson, San Rafael,CA,94901

Chris Keane, San Rafael,CA,94901

Tim Waddy, San Rafael,CA,94901

Bruce Sadownick, San Rafael,CA,94901

Julian Islas, San Rafael,CA,94901

Richard Bartolacelli, San Rafael,CA,94901

Harrison Kurzer, San Rafael,CA,94901

Thomas Voigt, San Rafael,CA,94901

Rich Graf, San Rafael,CA,94901

Ben Ceschi, San Rafael,CA,94901

James Doyle, San Rafael,CA,94901

Christopher Scarabosio, San Rafael,CA,94901

Brian Marks, San Rafael,CA,94901

Jean Olive-Lammers, San Rafael,CA,94901

Doug Gawoski, San Rafael,CA,94901

Bill Whitney, San Rafael,CA,94901

Sridhar Prasad, San Rafael,CA,94901

Randy Springstead, San Rafael,CA,94901

Daniel Zemelman, San Rafael,CA,94901

Matt Grimshaw, San Rafael,CA,94901

Patrick Lewis, San Rafael,CA,94901

Vivek Bhaskar, San Rafael,CA,94901

Ryan Graff, San Rafael,CA,94901

William Berryhill, San Rafael,CA,94903

Bryan Ackrell, San Rafael,CA,94903

Stephen Shaw, San Rafael,CA,94903

Chuck Runkel, San Rafael,CA,94903

Larry Hoki, San Rafael,CA,94903

Joseph Cresalia, San Rafael,CA,94903

Fred Abrams, San Rafael,CA,94903

Ronnie Feldman, San Rafael,CA,94903

Preston McCoy, San Rafael,CA,94903
Phillip Ziegler, San Rafael,CA,94903
Federico Brocero, San Rafael,CA,94903
Jeffrey Durham, San Rafael,CA,94903
Konrad Collins, San Rafael,CA,94903
Collin Breakstone, San Rafael,CA,94903

Peter Roodhuyzen, San Rafael,CA,94903

Vivan Larson, San Rafael,CA,94903
Scot Wagner, San Rafael,CA,94903
Kyle Payne, San Rafael,CA,94903
Walt Weiskopf, San Rafael,CA,94903
Matthew Sullivan, San Rafael,CA,94903
Jonathan Lyons, San Rafael,CA,94903
John Farman, San Rafael,CA,94903
Andy Falk, San Rafael,CA,94903
Patrick Obrien, San Rafael,CA,94903
Nathan Dunn, San Rafael,CA,94903
Trent Chamberlin, San Rafael,CA,94903
Josh Alwitt, San Rafael,CA,94903
Robert Schaff, San Rafael,CA,94903
Joshua Archer, San Rafael,CA,94903
Thomas Gable, San Rafael,CA,94903

Douglas Neecke, San Rafael,CA,94903
Jon Hutchins, San Rafael,CA,94903
Frank Solomon, San Rafael,CA,94903
Bill Bockwoldt, Petaluma,CA,94952
Dan Capozzi, Petaluma,CA,94952
Andre Ribeiro, San Rafael,CA,94901
Darrell St.Blaine, San Rafael,CA,94901
Matthew Drucker, San Rafael,CA,94901
William Disbrow, San Rafael,CA,94901
Gene Mcginnis, San Rafael,CA,94901
William Mckenzie, San Rafael,CA,94901
Scott De Turk, San Rafael,CA,94901
Mark Maier, San Rafael,CA,94901
Jake Hunerberg, San Rafael,CA,94901
Peter Nocchiero, San Rafael,CA,94901
John Reitano, San Rafael,CA,94901
Ron Peters, San Rafael,CA,94901
Mark Carbone, San Rafael,CA,94901
Dennis Myers, San Rafael,CA,94901
Benjamin Porter, San Rafael,CA,94901
Gerald Sax, San Rafael,CA,94901
Tim Jones, San Rafael,CA,94901
Walter Tanner, San Rafael,CA,94901

Jeanne Ross, San Rafael,CA,94901
Michael Kelly, San Rafael,CA,94901
Mat Dalpino, San Rafael,CA,94901
Michael Dolan, San Rafael,CA,94901
Dean Fukushima, San Rafael,CA,94901
Robert Breslow, San Rafael,CA,94901
Alex Thoemmes, San Rafael,CA,94901
Darrin Schultz, San Rafael,CA,94901
Michael Damiani, San Rafael,CA,94901
Tod Hunter, San Rafael,CA,94901
Cory Hoeferlin, San Rafael,CA,94901
Thomas Scheidig, San Rafael,CA,94901
Fabrice Florin, Mill Valley,CA,94941
Tom Dorris, Mill Valley,CA,94941
Joe Ching, Mill Valley,CA,94941
Morrow Otis, Mill Valley,CA,94941
Steven Gordman, Mill Valley,CA,94941
Leland Durkee, Mill Valley,CA,94941
Christopher Womack, Mill Valley, CA,94941

Laurie Johnson, Mill Valley,CA,94941
Andrew Johns, Mill Valley,CA,94941
Jerome Rossen, Mill Valley,CA,94941
Paul Lundgren, Mill Valley,CA,94941

Grant Jarrett, Mill Valley,CA,94941
Harry Seraydarian, Mill Valley,CA,94941
Sean Norton, Mill Valley,CA,94941
Josh Andresen, Mill Valley,CA,94941
David Simerly, Mill Valley,CA,94941
David Boehle, Mill Valley,CA,94941
Tom Redmond, Mill Valley,CA,94941
Adam Hawkey, Mill Valley,CA,94941
Corey Vitale, Mill Valley,CA,94941
Michael Lopez, Mill Valley,CA,94941
Wolfgang Huelse, Mill Valley,CA,94941
Eric Montizambert, Mill Valley,CA,94941
Bob Perry, Mill Valley,CA,94941
Don Cohon, Mill Valley,CA,94941
Larry Anderson, Mill Valley,CA,94941
John Buchta, Mill Valley,CA,94941
Grant Palmer, Mill Valley,CA,94941
Dan St John, Mill Valley,CA,94941
Olivier Morin, Mill Valley,CA,94941
Robert Reddick, Mill Valley,CA,94941
James Begley, Mill Valley,CA,94941
Edward Denebeim, Mill Valley,CA,94941
Gareth Butler, Mill Valley,CA,94941

Pieter Bogaards, Mill Valley,CA,94941

Brian Dayton, Mill Valley,CA,94941

Gilbert Williams, Mill Valley,CA,94941

Vic Herrmann, Mill Valley,CA,94941

Mike Roberts, Petaluma,CA,94952

Palricn Odowd, Petaluma,CA,94952

Luigi Petrigh-Dove, Petaluma,CA,94952

Patrick O'dowd, Petaluma,CA,94952

Thomas Bradley, Petaluma,CA,94952

Todd Blank, Petaluma,CA,94952

Todd Gracyk, Petaluma,CA,94952

Kim Schott, Petaluma,CA,94952

Frank Bermudes, Petaluma,CA,94952

Brett Millar, Petaluma,CA,94952

Lee Keyzer, Petaluma,CA,94952

Ed Porto, Petaluma,CA,94952

Stephen Mori, Petaluma,CA,94952

Michael Kraus, Petaluma,CA,94952

Gilbert Dias, Petaluma,CA,94952

Zachary Stanley, Petaluma,CA,94952

David Lebow, Petaluma,CA,94952

Jerome Cleland, Petaluma,CA,94952

Steve Newell, Petaluma,CA,94952

James Wheeler, Petaluma,CA,94952

Mark Wicker, Petaluma,CA,94952

David Royall, Petaluma,CA,94952

Gregory Reisinger, Petaluma,CA,94952

Hans Barnaal, Petaluma,CA,94952

Michael Arrow, Larkspur,CA,94939

Chad Solter, Larkspur,CA,94939

Paul Smith, Larkspur,CA,94939

John Kane, Larkspur,CA,94939

Corey Stodolnic, Larkspur,CA,94939

Mark Edelen, Larkspur,CA,94939

Albert Wood, Larkspur,CA,94939

Michael McDermott, Larkspur,CA,94939

Richard Boyer, Larkspur,CA,94939

Jeremy Gray, Larkspur,CA,94939

Steve Lewczyk, Larkspur,CA,94939

Ryan Abbe, Larkspur,CA,94939

Daniel Matso, Larkspur,CA,94939

Miles McConnell, Larkspur,CA,94939

Bill Webb, Larkspur,CA,94939

Jim Garcia, Larkspur,CA,94939

Ryan Mckim, Larkspur,CA,94939

Richard Fister, Larkspur,CA,94939

Edward Gerstenfeld, Larkspur,CA,94939

John Glenn, Larkspur,CA,94939

Chris Santas, Larkspur,CA,94939

James Hunnewell, Larkspur,CA,94939

Tim Gerstein, Larkspur,CA,94939

Donald Walker, Larkspur,CA,94939

Tom Flynn, Larkspur,CA,94939

Richard Cohan, Larkspur,CA,94939

Jeffrey Jones, Larkspur,CA,94939

Robert Newcomer, Larkspur,CA,94939

Brian Powell, Larkspur,CA,94939

James Sievert, Larkspur,CA,94939

Jim Stevenson, Mill Valley,CA,94941

Chris Gilmor, Mill Valley,CA,94941

Grant Stewart, Mill Valley,CA,94941

Jack Pessa, Mill Valley,CA,94941

Elliott Jacobs, Mill Valley,CA,94941

Bart Ferrell, Mill Valley,CA,94941

Bill Hager, Mill Valley,CA,94941

Mark Jamison, Mill Valley,CA,94941

Stephen Minus, Mill Valley,CA,94941

James Workman, Mill Valley,CA,94941

Bruce Barnett, Mill Valley,CA,94941

Aron Knickerbocker, Mill Valley,CA,94941

Robert Matthew, Mill Valley,CA,94941

Eric Eisenberg, Mill Valley,CA,94941

Mario Barrios, Mill Valley,CA,94941

David Griffs, Mill Valley,CA,94941

Lawrence Westlake, Mill Valley,CA,94941

Randi Lachter, Mill Valley,CA,94941

Stephen Kent, Mill Valley,CA,94941

Michael Ina, Mill Valley,CA,94941

Joe Kennedy, Mill Valley,CA,94941

Ryan Fedoroff, Mill Valley,CA,94941

Matt Coan, Mill Valley,CA,94941

William Berger, Mill Valley,CA,94941

Steve Meyer, Mill Valley,CA,94941

Philip Mickelson, Mill Valley,CA,94941

Paul Stanger, Mill Valley,CA,94941

Jon Duncanson, Mill Valley,CA,94941

Steve Edelson, Mill Valley,CA,94941

Alton Moore, Fairfax,CA,94930

Justin Piatt, Fairfax,CA,94930

David Faro, Fairfax,CA,94930

Randy Briggs, Fairfax,CA,94930

Allan Kratche, Fairfax,CA,94930

William Keene, Fairfax,CA,94930

Billy Carmassi, Fairfax,CA,94930

Glenn Steiner, Fairfax,CA,94930

Thomas Asher, Fairfax,CA,94930

Charles Theobald, Fairfax,CA,94930

Hal Mosher, Fairfax,CA,94930

James Serafimides, Fairfax,CA,94930

Marc Raymond, Fairfax,CA,94930

Richard Foley, Fairfax,CA,94930

Adam Barnum, Fairfax,CA,94930

Richard Gossett, Fairfax,CA,94930

Tom Thur, Fairfax,CA,94930

William Hughes, Fairfax,CA,94930

Enrico Petri, Fairfax,CA,94930

Richard Doores, Fairfax,CA,94930

Joshua Lance, Fairfax,CA,94930

John Beattie, Fairfax,CA,94930

Roy Murrin, Fairfax,CA,94930

David Sinaiko, Fairfax,CA,94930

Steve Berg-Smith, Fairfax,CA,94930

Charles Wehr, Fairfax,CA,94930

Ryan Giesen, Fairfax,CA,94930

Dylan Hosey, Fairfax,CA,94930

Kathleen Thomas, Fairfax,CA,94930

Julien Pearl, Fairfax,CA,94930

Daniel Neal, Fairfax,CA,94930

Brian Auger, Fairfax,CA,94930

Rob Short, Fairfax,CA,94930

Jim Murphy, Fairfax,CA,94930

Michael Robinson, Fairfax,CA,94930

Ben Soccorsy, Larkspur,CA,94939

Jon Rossi, Sausalito,CA,94965

Carroll Covey, Sausalito,CA,94965

Evan Jane Kriss, Sausalito,CA,94965

Robert Edwards, Sausalito,CA,94965

Mark Kriss, Sausalito,CA,94965

Jonathan Block, Sausalito,CA,94965

David Hersh, Sausalito,CA,94965

John Hefler, Sausalito,CA,94965

David Hanchette, Corte Madera,CA,94925

Kevin Krumwiede, Corte Madera,CA,94925

Arthur Young, Corte Madera,CA,94925

Steve Johnson, Corte Madera,CA,94925

Alice Moore, Corte Madera,CA,94925

Ellie Kennedy, Corte Madera,CA,94925

Anke Bucher, Sausalito,CA,94965

Lauren De Remer, Sausalito,CA,94965

Cindy Smith, Novato,CA,94945

Marianne Griffeth, San Anselmo,CA,94960

Ellen Lerner, San Anselmo,CA,94960

Robyn Donsly, San Anselmo,CA,94960

Elsa Latini, San Anselmo,CA,94960

Joan Heblack, San Rafael,CA,94903

Karen Shaw, San Rafael,CA,94903

Sharon Jean Navratil, San Rafael,CA,94903

Andrea Ravas, San Rafael,CA,94903

Rhea Brown, San Rafael,CA,94901

Dixie Uhl, San Rafael,CA,94901

Darcelle Curtis, San Rafael,CA,94901

Linda Rames, Mill Valley,CA,94941

Susan Barbour, Mill Valley,CA,94941

Sheri Coles, Larkspur,CA,94939

Aileen Murphy, Larkspur,CA,94939

Elisa Johnson, Larkspur,CA,94939

Melissa Polick, Mill Valley,CA,94941

Katherine Edwinson, Mill Valley,CA,94941

Catherine Kane, Fairfax,CA,94930

Jennifer Doores, Fairfax,CA,94930

Marina Ames, Fairfax,CA,94930

Pat Rice, Larkspur,CA,94939

Sylvia Donati, Corte Madera,CA,94925

Barbara Kristoff, Corte Madera,CA,94925

Shelley Mitchell, Corte Madera,CA,94925

Suzanne Herrero, Corte Madera,CA,94925

Chance Claxton, Corte Madera,CA,94925

Jill Kauffman-Johnson, Corte
Madera,CA,94925

Patti Embert, Sausalito,CA,94965

Nelly Spieler, Sausalito,CA,94965

Rowena Finegan, Sausalito,CA,94965

Kirsten Malone, Sausalito,CA,94965

Natasha Kimmell, Sausalito,CA,94965

Helga Fleishman, Sausalito,CA,94965

Mary Thomson, Sausalito,CA,94965

Sue Frank, Sausalito,CA,94965

Jennifer Dipasquale, Sausalito,CA,94965

Laurel Wessler, Sausalito,CA,94965

Carole Ormiston, Sausalito,CA,94965
Nlna Greeley, Sausalito,CA,94965
Rebecca Drake, Sausalito,CA,94965
Jennifer Jackson, Fairfax,CA,94930
Karen Lucas, Fairfax,CA,94930
Liza Guastucci, Fairfax,CA,94930
Erica Kalve, Fairfax,CA,94930
Elizabeth Harris, Fairfax,CA,94930
Jean Carlson, Fairfax,CA,94930
Margie McGuire, Fairfax,CA,94930
Mireya Quirie, Fairfax,CA,94930
Sarah Dempsey, Fairfax,CA,94930
Tara Hernandez, Fairfax,CA,94930
Melissa Merz, Fairfax,CA,94930
Denise Mondot, Fairfax,CA,94930
Lucie Smith, Fairfax,CA,94930
Sam Alexander, Fairfax,CA,94930
Wendy Lee, Fairfax,CA,94930
Madeleine Wood, Fairfax,CA,94930
Ashley Meis, Fairfax,CA,94930
Jacqueline Stove, Fairfax,CA,94930
Eugenia Ives, Fairfax,CA,94930
Jacqueline Kieseewetter, Fairfax,CA,94930

Miki Marelich, Fairfax,CA,94930
Golda Michelson, Fairfax,CA,94930
Kendra Scott, Fairfax,CA,94930
Jona Scovill, Fairfax,CA,94930
Natalie Zimmerman, Fairfax,CA,94930
Helen Cooluris, Fairfax,CA,94930
Gina Longo, Fairfax,CA,94930
Phoebe Richardson, Fairfax,CA,94930
Ellie Boldrick, Fairfax,CA,94930
Amanda Mathson, Fairfax,CA,94930
Jennifer Hibbitts, Fairfax,CA,94930
Cindi Darling, Fairfax,CA,94930
Dawn Steiner, Fairfax,CA,94930
Toni Zandol, Fairfax,CA,94930
Patricia Taylor, Fairfax,CA,94930
Karen Lynn, Fairfax,CA,94930
Jana Vance, Fairfax,CA,94930
Ruth Ann Binder, Fairfax,CA,94930
Mary Donovan, Larkspur,CA,94939
Linda Walsh, Larkspur,CA,94939
Edie Yamamura, Larkspur,CA,94939
Barbara Alexander, Larkspur,CA,94939
Diana Fitzpatrick, Larkspur,CA,94939

Laura Anderson, Larkspur,CA,94939
Jennifer Harrison, Larkspur,CA,94939
Barbara Kuehler, Larkspur,CA,94939
Margaret Reis, Larkspur,CA,94939
Nikki Meredith, Larkspur,CA,94939
Susan Lange, Larkspur,CA,94939
Sara Esslinger, Larkspur,CA,94939
Katherine Jones, Larkspur,CA,94939
Jessica Hall, Larkspur,CA,94939
Martha Schwarz, Larkspur,CA,94939
Ellen Greenwald, Larkspur,CA,94939
Deborah Dean, Larkspur,CA,94939
Brooke Passano, Larkspur,CA,94939
Jacqueline Gilman, Larkspur,CA,94939
Donna Crawford, Larkspur,CA,94939
Karen Mae, Larkspur,CA,94939
Sharon Henning, Larkspur,CA,94939
Fiona Gilmartin, Larkspur,CA,94939
Mary Wagstaff, Larkspur,CA,94939
Brenda Bercun, Larkspur,CA,94939
Amanda Whitney, Mill Valley,CA,94941
Claudia Hampe, Mill Valley,CA,94941
Shelley Richardson, Mill Valley,CA,94941

Claire Thorp, Mill Valley,CA,94941
Jennifer Dodge, Mill Valley,CA,94941
Kathy Piombo, Mill Valley,CA,94941
Kat Karacozoff, Mill Valley,CA,94941
Helen Anawalt, Mill Valley,CA,94941
Victoria Vogel, Mill Valley,CA,94941
Sarah Tabbutt, Mill Valley,CA,94941
Lynnette Walsh, Mill Valley,CA,94941
Tracy Haughton, Mill Valley,CA,94941
Aimee Levin, Mill Valley,CA,94941
Lorna Anderson, Mill Valley,CA,94941
Krista Gallucci, Mill Valley,CA,94941
Michelle Sims, Mill Valley,CA,94941
Robyn Geissler, Mill Valley,CA,94941
Geraldine Jennings, Mill Valley,CA,94941

Nona Dennis, Mill Valley,CA,94941
Esther Vermeer, Mill Valley,CA,94941
Maureen Labro, Mill Valley,CA,94941
Mia Michel, Mill Valley,CA,94941
Mara Meisner, Mill Valley,CA,94941
Judith Maas, Mill Valley,CA,94941
Lynne Barnard, Mill Valley,CA,94941
Nanea Meyer, Mill Valley,CA,94941

Mary Noble, Mill Valley,CA,94941
Val Westen, Mill Valley,CA,94941
Dorothy Bray, Mill Valley,CA,94941
Deborah Meagher, Mill Valley,CA,94941
Kelli Cruz, Mill Valley,CA,94941
Kathryn Hughes, Mill Valley,CA,94941
Alexandra Boersma, Mill Valley,CA,94941

Jutta Reichert, Mill Valley,CA,94941
Arlene Helfrich, Mill Valley,CA,94941
Kirstin Schmidt, Mill Valley,CA,94941
Alison Quoyeser, Mill Valley,CA,94941
Judy Kimmel, Mill Valley,CA,94941
Noelle Poncelet, Mill Valley,CA,94941
Christine Zuardo, Mill Valley,CA,94941
Beverlee Bentley, Mill Valley,CA,94941
Valerie Wynn, Mill Valley,CA,94941
Meredith Burns, Mill Valley,CA,94941
Ruth Hirner, Mill Valley,CA,94941
Susan Stanger, Mill Valley,CA,94941
Elaine Hoover, Mill Valley,CA,94941
Aness Pogni, Mill Valley,CA,94941
Darel Thompson, Mill Valley,CA,94941
Julie Bremer, Mill Valley,CA,94941

Andrea Windom, Mill Valley,CA,94941
Kelly Horner, Mill Valley,CA,94941
Melanie Stoll, Mill Valley,CA,94941
Suzana Sawyer, Mill Valley,CA,94941
Patricia Barry, Mill Valley,CA,94941
Tamara Shearer, Mill Valley,CA,94941
Christina de Zafra, Mill Valley,CA,94941
Mary Herr, Mill Valley,CA,94941
Meghan Rowan, Mill Valley,CA,94941
Naomi Peterkin, Mill Valley,CA,94941
Lisa Fisher, Mill Valley,CA,94941
Florence McClain, Mill Valley,CA,94941
Heather Whelan, Mill Valley,CA,94941
Lindsay Iavarone, Mill Valley,CA,94941
Nancy Jancar, Mill Valley,CA,94941
Marilyn Barrett, Mill Valley,CA,94941
Catherine Cadloni, Mill Valley,CA,94941
Sandra Hoben, Mill Valley,CA,94941
Kim Stopak, Mill Valley,CA,94941
Susan Lindstrom, Mill Valley,CA,94941
Kate Harle, Mill Valley,CA,94941
Frances Strychaz, Mill Valley,CA,94941
Kress Jack, Mill Valley,CA,94941

Jeanne Moe, Mill Valley,CA,94941

Lisa Joss, Mill Valley,CA,94941

Roberta Hubena, Mill Valley,CA,94941

Maxine Attizahn, Mill Valley,CA,94941

Kim Hobson, Mill Valley,CA,94941

Judith Lichterman, Mill Valley,CA,94941

Ivonne Vacce, Mill Valley,CA,94941

Tricia Tanoury, Mill Valley,CA,94941

Maria Troncoso, Mill Valley,CA,94941

Michelle Dodd, Mill Valley,CA,94941

Amy Hiraga, Mill Valley,CA,94941

Stacey DeGooyer, Petaluma,CA,94952

Janet Marshall, Petaluma,CA,94952

Susan Victor, Petaluma,CA,94952

Deborah Defaria, Petaluma,CA,94952

Carol Harrison, Petaluma,CA,94952

Gail Hamilton, Petaluma,CA,94952

Jennifer Newman, Petaluma,CA,94952

Tammy Siebold, Petaluma,CA,94952

Melissa Hatheway, Petaluma,CA,94952

Cynthia Granados, Petaluma,CA,94952

Norma Liner, Petaluma,CA,94952

Michelle Torres, Petaluma,CA,94952

Catherine Podesta, Petaluma,CA,94952

Jane Weatherwax, Petaluma,CA,94952

Emily Roeder, Petaluma,CA,94952

Corrie Johnson, Petaluma,CA,94952

Sharen Schrock, Petaluma,CA,94952

Alison Marks, Petaluma,CA,94952

Mary Neidel, Petaluma,CA,94952

Amy Hogan, Petaluma,CA,94952

Sheri Remail, Petaluma,CA,94952

Janice Hardy, Petaluma,CA,94952

Raye Lynn Thomas, Petaluma,CA,94952

Debra Dickerson, Petaluma,CA,94952

Patricia Maher, Petaluma,CA,94952

Julia Allen, Petaluma,CA,94952

Linda Munsch, Petaluma,CA,94952

Rebekah Brown, Petaluma,CA,94952

Dorothy Skinner, Petaluma,CA,94952

Monica Shanahan, Petaluma,CA,94952

Ann Belove, Petaluma,CA,94952

Mary Turner, San Rafael,CA,94901

Melissa Millerick, San Rafael,CA,94901

Judith Milani, San Rafael,CA,94901

Jason Heffernan, San Rafael,CA,94901

Emilie Albertoli, San Rafael,CA,94901
Alexandra Sakellariou, San Rafael,CA,94901

Linda Burke, San Rafael,CA,94901
Barbara Sullivan, San Rafael,CA,94901
Linsey Sciutti, San Rafael,CA,94901
Kamala Brown, San Rafael,CA,94901
Suzanne Gilbert, San Rafael,CA,94901
Cathy Schroeder, San Rafael,CA,94901
Amy Gladin, San Rafael,CA,94901
Susan Huffman, San Rafael,CA,94901
Mimi Rysso, San Rafael,CA,94901
Tina Lundh, San Rafael,CA,94901

Elaine Mont-Eton, San Rafael,CA,94901
Nathalie Costello, San Rafael,CA,94901
Francoise Boucher, San Rafael,CA,94901

Maureen McGowan, San Rafael,CA,94901

Elise Falcone Rankin, San Rafael,CA,94901

Barbara Mares, San Rafael,CA,94901
Alexa Calabro, San Rafael,CA,94901
Sharon Murphy, San Rafael,CA,94901
Linda Coffee, San Rafael,CA,94901

Vikki Adams, San Rafael,CA,94901
Tom Schmidt, San Rafael,CA,94901

Cayla Coleman, San Rafael,CA,94901
Rachel Jensen, San Rafael,CA,94901
Susan Gatrill, San Rafael,CA,94901
Padma Rao, San Rafael,CA,94901
Mary Coyne, San Rafael,CA,94901
Rebecca Walters, San Rafael,CA,94901
Karen Bouris, San Rafael,CA,94901
Annika Osborn, San Rafael,CA,94901
Lynne Serra, San Rafael,CA,94901
Christine Christiansen, San Rafael,CA,94901

Suzanne Hudson, San Rafael,CA,94901
Chelsea Cundiff, San Rafael,CA,94901
Gillian Kneass, San Rafael,CA,94901
Kate Williams, San Rafael,CA,94901
Alba Moreno, San Rafael,CA,94901
Sandra Wong, San Rafael,CA,94901
Carol Valls, San Rafael,CA,94901
Alezz Laielen, San Rafael,CA,94901
Rae Ann Gustafson, San Rafael,CA,94901

Kathy Marshall, San Rafael,CA,94901

Alison Prentice, San Rafael,CA,94901
Nicole Hediger, San Rafael,CA,94901
Maya Webb, San Rafael,CA,94901
Fran Halperin, San Rafael,CA,94901
Robyn Fernsworth, San Rafael,CA,94901

Joya Cory, San Rafael,CA,94901
Judith Diehl, San Rafael,CA,94901
Suzanna Gratz, San Rafael,CA,94901
Dulce Mcallister, San Rafael,CA,94901
Kathi Walsh, San Rafael,CA,94901
Jane Chaudhuri, San Rafael,CA,94901
Erin Frazier, San Rafael,CA,94901
Grace Walker, San Rafael,CA,94901
Anna Rogers, San Rafael,CA,94901
Christine Godfrey, San Rafael,CA,94901
Helen Jacobsen, San Rafael,CA,94901
Hilary Perkins, San Rafael,CA,94901
Patti McKay, San Rafael,CA,94901
Tina Sampath, San Rafael,CA,94901
Nancy Otto, San Rafael,CA,94901
Laura Yoklanich, San Rafael,CA,94901
Ann Summerlin, San Rafael,CA,94901
Alisha Ferrone, San Rafael,CA,94901

Brenda Evans, San Rafael,CA,94901
Karen Lang, San Rafael,CA,94901
Judith Stambolis, San Rafael,CA,94903
Kathleen Vanoni, San Rafael,CA,94903
Sandy Mixsell, San Rafael,CA,94903
Terri Delangis, San Rafael,CA,94903
Margaret Hoopongarner, San Rafael,CA,94903

Katie Martin, San Rafael,CA,94903
Mia Andrew, San Rafael,CA,94903
Margaret Lord, San Rafael,CA,94903
Nancy Spellman, San Rafael,CA,94903
Nada Grkinich, San Rafael,CA,94903
Jane Alaimo, San Rafael,CA,94903
Nancy Fox, San Rafael,CA,94903
Eddie Shine, San Rafael,CA,94903
Laurie Peckhan, San Rafael,CA,94903
Amy Poirier, San Rafael,CA,94903
Wendy Kirk-Scalise, San Rafael,CA,94903

Heidi Brunette, San Rafael,CA,94903
Angelique Clark, San Rafael,CA,94903
Conde Freeman, San Rafael,CA,94903
Diana Van Doren, San Rafael,CA,94903

Kate Powers, San Rafael,CA,94903
Andrea Hansen, San Rafael,CA,94903
Kimberly Kenley-Salarpi, San Rafael,CA,94903

Denise Albertini, San Rafael,CA,94903
Lisa Cooper, San Rafael,CA,94903
Laurie Steese, San Rafael,CA,94903
Kimberlee Walden, San Rafael,CA,94903

Lucy Garrett, San Rafael,CA,94903
Alaina Yoakum, San Rafael,CA,94903
Nicole Kowalski, San Rafael,CA,94903
Julie Auslander, San Rafael,CA,94903
Nancy Mack, San Rafael,CA,94903
Jennifer Simmons, San Rafael,CA,94903

Michelle Fouts, San Rafael,CA,94903
Irene Cooper, San Rafael,CA,94903
Sharon Jones, San Rafael,CA,94903
Marla Krause, San Rafael,CA,94903
Michelle Wagner, San Rafael,CA,94903
Lynne Dixon, San Rafael,CA,94903
Sarah Medeiros, San Rafael,CA,94903
Annie Harding, San Rafael,CA,94903
Coleen Byrne, San Rafael,CA,94903

Igino Pellizzari, San Rafael,CA,94903
Helen Brackley, San Rafael,CA,94903
Kristina Doxon, San Rafael,CA,94903
Donna Moser, San Rafael,CA,94903
Joanne Conte, San Rafael,CA,94903
Lauren Goodman, San Rafael,CA,94903

Ellen Swanson, San Rafael,CA,94903
Linda Hsu, San Rafael,CA,94903
Alissa Robinow, San Rafael,CA,94903
Margot Dietzer, Novato,CA,94945
J P Perino, Novato,CA,94945
Barbara Wein, Novato,CA,94945
Angela DeSalvo, Novato,CA,94945
Betty Matrui, Novato,CA,94945
Karen Corral, Novato,CA,94945
Smith Amy, Novato,CA,94945
Ana Warner, Novato,CA,94945
Maija Schaefer, Novato,CA,94945
Susan Pollock, Novato,CA,94945
Barbara Roddie, Novato,CA,94945
Jen Magat, Novato,CA,94945
Kimberly Smith, San Anselmo,CA,94960
Kristi Epke, San Anselmo,CA,94960

Karen Lopez, San Anselmo,CA,94960
Melanie Waite, San Anselmo,CA,94960
Laurean Nardone, San Anselmo,CA,94960

Jill Jarvie, San Anselmo,CA,94960
Ziba Sohaei, San Anselmo,CA,94960
Melinda Mahl, San Anselmo,CA,94960
Meredith Parnell, San Anselmo,CA,94960

Sandra Brady, San Anselmo,CA,94960
Ellen Caldwell, San Anselmo,CA,94960
Jerri Linn, San Anselmo,CA,94960
Phoebe Schraer, San Anselmo,CA,94960

Barbara Lind, San Anselmo,CA,94960
Jennifer Richard, San Anselmo,CA,94960

Carolyn Smith, San Anselmo,CA,94960
Kathleen Ames, San Anselmo,CA,94960

Michele Chouinard, San Anselmo,CA,94960

Tomoko Ferguson, San Anselmo,CA,94960

Lisa Travaglini, San Anselmo,CA,94960
Mindy Uhrlaub, San Anselmo,CA,94960

Patricia Shiu, San Anselmo,CA,94960
Chloe Silber, San Anselmo,CA,94960
Asia Poppers, San Anselmo,CA,94960
Liz Anderson, San Anselmo,CA,94960
Valerie Hersey, San Anselmo,CA,94960
Gretchen Pope, San Anselmo,CA,94960
Kathleen Danziger, San Anselmo,CA,94960

Elizabeth Briggson, San Anselmo,CA,94960

Celeste Chapman, San Anselmo,CA,94960

Nicole Ferris, San Anselmo,CA,94960
Jeanne Imai, San Anselmo,CA,94960
Andrea Cullerton, San Anselmo,CA,94960

Janet Donaldson, San Anselmo,CA,94960

Leanora Kent, San Anselmo,CA,94960
Marshall Bentley, San Anselmo,CA,94960

Mary Khan, San Anselmo,CA,94960
Melanie Traub, San Anselmo,CA,94960
Cindie Tashima, San Anselmo,CA,94960

Rebecca Rishell, San Anselmo,CA,94960

Donna Hanley, San Anselmo,CA,94960

Christina Spagnoli, San Anselmo,CA,94960

Melissa Fitzpatrick, San Anselmo,CA,94960

Tina Kroot, San Anselmo,CA,94960

Lauren Turner, San Anselmo,CA,94960

Wade Childress, San Anselmo,CA,94960

Caitlin Mitchell, San Anselmo,CA,94960

Jennifer Asselstine, San Anselmo,CA,94960

Anne Donnelly, San Anselmo,CA,94960

Wendy Murphy, San Anselmo,CA,94960

Susan Sherer, San Anselmo,CA,94960

Judith Anderson, San Anselmo,CA,94960

Perri Russell, San Anselmo,CA,94960

Sofia Cortez, San Anselmo,CA,94960

Lillian Kocher, San Anselmo,CA,94960

Kristen Gregoriev, San Anselmo,CA,94960

Cecelia Cuevas, San Anselmo,CA,94960

Jennifer Gammon, San Anselmo,CA,94960

Susan Deardorff, San Anselmo,CA,94960

Gail Galli, San Anselmo,CA,94960

Paula Berry, San Anselmo,CA,94960

Patricia Kavanaugh, San Anselmo,CA,94960

Hanna Noel, San Anselmo,CA,94960

Karen Pando-Mars, San Anselmo,CA,94960

Ingrid Mueller, San Anselmo,CA,94960

Jerri Romm, San Anselmo,CA,94960

Maxine Nilsen, San Anselmo,CA,94960

Barbara Chambers, San Anselmo,CA,94960

Christine Armstrong-Dangles, San
Anselmo,CA,94960

Paula Wooster, San Anselmo,CA,94960

Julie Brod, San Anselmo,CA,94960

Krishna Tyner, San Anselmo,CA,94960

Jamie Davis, San Anselmo,CA,94960

Valerie Marckwordt, San Anselmo,CA,94960

Joan Halverson, San Anselmo,CA,94960

Kristine Waters, San Anselmo,CA,94960

Nadine Hanna, San Anselmo,CA,94960

Kathleen George, San Anselmo,CA,94960

Lisa Dellavalle, San Anselmo,CA,94960
Penny Wright, San Anselmo,CA,94960
Jessica Matchett, San Anselmo,CA,94960

Carol Tabb, San Anselmo,CA,94960
Gina Martinez, San Anselmo,CA,94960
Katherine Acker, Novato,CA,94945
Karla Martinez, Novato,CA,94945
Karen Retter, Novato,CA,94945
Kaya Farmer, Novato,CA,94945
Lin Pa, Novato,CA,94945
Brian Laramie, San Anselmo,CA,94960
Beth Schaffer, San Anselmo,CA,94960
Anthony Fedrigo, San Anselmo,CA,94960

Kevin Brown, San Anselmo,CA,94960
Arbor McCauley, San Anselmo,CA,94960

Anonymous Donor, San Anselmo,CA,94960

Kelly Callarman, San Anselmo,CA,94960

Kim Allen, San Anselmo,CA,94960
Mona Lindquist, San Anselmo,CA,94960

Shannon Israel, San Anselmo,CA,94960
Alexis Angelucci, San Anselmo,CA,94960

Canvass Lead, San Anselmo,CA,94960
Kelly Underwood, San Anselmo,CA,94960

Margaret Evans, San Anselmo,CA,94960

Tannin Silva, San Anselmo,CA,94960
Jasmyne Snyder, San Anselmo,CA,94960

Baron Upton, San Anselmo,CA,94960
Diana Cox, San Anselmo,CA,94960
Shilo Schubert, San Anselmo,CA,94960
Leah Oconnell, San Anselmo,CA,94960
Rebecca Watts, San Anselmo,CA,94960
Danni Hone, San Anselmo,CA,94960
Nick Svenson, San Anselmo,CA,94960
Christopher Faville, San Anselmo,CA,94960

Adrian Jones, San Anselmo,CA,94960
Michelle Henry, San Anselmo,CA,94960
Will Anton, San Anselmo,CA,94960
Tyke Lewis, San Anselmo,CA,94960
Dana Ferrarese, San Anselmo,CA,94960

Alison Studebaker, San Anselmo,CA,94960

Anonymous Donor, San Anselmo,CA,94960

M G Owens, San Anselmo,CA,94960

Chris Clark, San Anselmo,CA,94960

Summer Owen, San Anselmo,CA,94960

Lynn Milliman, San Anselmo,CA,94960

Kendall Ardito, San Anselmo,CA,94960

Elizabeth Casey, San Anselmo,CA,94960

Kim Barich, San Rafael,CA,94901

Chris Salcido, San Rafael,CA,94901

Herbert Taylor, San Rafael,CA,94901

Sophillia Tagaban, San Rafael,CA,94901

Kevin Carroll, San Rafael,CA,94901

Antoni Urbano, San Rafael,CA,94901

Saskia Feast, San Rafael,CA,94901

Nora Des Tombe, San Rafael,CA,94901

Anita Mattison, San Rafael,CA,94901

John Texeira, San Rafael,CA,94901

Pete Houst, San Rafael,CA,94901

Saskia Feast, San Rafael,CA,94901

Elizabeth Zuniga, San Rafael,CA,94901

Dj McCaw, San Rafael,CA,94901

Nora Webb, San Rafael,CA,94901

Drane Hicks, San Rafael,CA,94901

Chellene Wood, San Rafael,CA,94901

Edward Carroll, San Rafael,CA,94901

Joshua Thies, San Rafael,CA,94901

Arnel Capinpin, San Rafael,CA,94901

Don Johnston, San Rafael,CA,94901

Kittina Powers, San Rafael,CA,94901

Lucille Buell, San Rafael,CA,94901

Msusi Mweissmann, San Rafael,CA,94901

Jacqueline Van Auken, San Rafael,CA,94901

Saaaid Moezzi, San Rafael,CA,94901

Melissa Gongora, San Rafael,CA,94901

Douglas Keely, San Rafael,CA,94901

Dwight Wilson, San Rafael,CA,94901

Chalita Photikoe, San Rafael,CA,94901

Alex Spoerry, San Rafael,CA,94901

Anonymous Donor, San Rafael,CA,94901

Kendali Silva, San Rafael,CA,94901

Saman Ibrahimi, San Rafael,CA,94901

Bill Kelley, San Rafael,CA,94901

Bill Scott, San Rafael,CA,94901
Barrett Bauer, San Rafael,CA,94901
Sundara Jordan, San Rafael,CA,94901
Ariel Gutierrez, San Rafael,CA,94901
Susan Dale, San Rafael,CA,94901
Sherry Berringer, San Rafael,CA,94901
Sarah Beck, San Rafael,CA,94901
Pat Murphy, San Rafael,CA,94903
Vincent Ciolino, San Rafael,CA,94903
Amy Menapace, San Rafael,CA,94903
Laura Baquerizo, San Rafael,CA,94903
Zach Lehrer, San Rafael,CA,94903
Lo Mei Seh, San Rafael,CA,94903
Zvi Govrin, San Rafael,CA,94903
Lou Bialy, San Rafael,CA,94903
William Bacon, San Rafael,CA,94903
Susan Ross, San Rafael,CA,94903
Pavati Zeno, San Rafael,CA,94903
Janna Rudolph, San Rafael,CA,94903
Richard Greene, San Rafael,CA,94903
Doyleen McMurtry, San Rafael,CA,94903
Bernadette Szilvasy, San Rafael,CA,94903

Ian Moore, San Rafael,CA,94903
Heather Lmandell, San Rafael,CA,94903
Jamie Miller, San Rafael,CA,94903
Ed Taubel, Mill Valley,CA,94941
Chris Figueroa, Mill Valley,CA,94941
Iksvaku Spencer, Mill Valley,CA,94941
Kerry Rockers, Mill Valley,CA,94941
Milana Huang, Mill Valley,CA,94941
Kerry Levin, Mill Valley,CA,94941
Deusa Couto, Mill Valley,CA,94941
Bethany Shine, Mill Valley,CA,94941
Michelle Novotny, Mill Valley,CA,94941
Prachi Singh, Mill Valley,CA,94941
Chare Hansen, Mill Valley,CA,94941
Ryan Bourgeois, Mill Valley,CA,94941
Joan Dettmer, Mill Valley,CA,94941
Amanda Poole, Mill Valley,CA,94941
Rachel Ahn, Mill Valley,CA,94941
Jessamyn Jones, Mill Valley,CA,94941
Catherine's Chase, Mill Valley,CA,94941
Nathan Mayfield, Mill Valley,CA,94941
Ritsuko Morse, Mill Valley,CA,94941
Johnathan Kobe, Mill Valley,CA,94941

David Handelman, Mill Valley,CA,94941
Lena Winestone, Mill Valley,CA,94941
Matthew McRevey, Mill Valley,CA,94941
Dana Tuttle, Mill Valley,CA,94941
Ethan Taylor, Mill Valley,CA,94941
Marissa Dittler, Mill Valley,CA,94941
Kevin Edwards, Mill Valley,CA,94941
Morgan Jackson, Mill Valley,CA,94941
Ellen Cook, Mill Valley,CA,94941
Kristy Connolly, Mill Valley,CA,94941
Valorie Gertz, Mill Valley,CA,94941
Kathran Ray, Mill Valley,CA,94941
Jan Rapport, Mill Valley,CA,94941
Jose Isaac, Mill Valley,CA,94941
Colin Salter, Mill Valley,CA,94941
Sharon Malone, Mill Valley,CA,94941
Avra Alexiades, Petaluma,CA,94952
Wil Atkinson, Petaluma,CA,94952
Victoria Barsimanto, Petaluma,CA,94952

Juanita Radford, Petaluma,CA,94952
David Gomez-Rosado, Petaluma,CA,94952

Brandon Riviera, Petaluma,CA,94952

Kelly Smallcombe, Petaluma,CA,94952
James Dress, Petaluma,CA,94952
Kelly Carey, Petaluma,CA,94952
Joy Castillo, Petaluma,CA,94952
William O, Fairfax,CA,94930
Mirza Khan, Fairfax,CA,94930
Karrie Hovey, Fairfax,CA,94930
Shannon Tithof, Fairfax,CA,94930
Marina Carroll, Fairfax,CA,94930
Jan McDermott, Fairfax,CA,94930
Will Da Silva, Fairfax,CA,94930
Thomas Durrer, Fairfax,CA,94930
Christina Meyerive, Fairfax,CA,94930
Bob Hostetter, Fairfax,CA,94930
Pia Eriksson, Fairfax,CA,94930
Jordan Girman, Cotati,CA,94931
Shawn Bracken, Larkspur,CA,94939
Nicole Bianchi, Larkspur,CA,94939
Hugh Beecher, Larkspur,CA,94939
Jenn Persky, Larkspur,CA,94939
Loretta Phillips, Larkspur,CA,94939
Chris Murphy, Larkspur,CA,94939
Philippe Pradel, Larkspur,CA,94939

Conall Noonan, Mill Valley,CA,94941
Celimene Pastor, Mill Valley,CA,94941
Beat Bossart, Mill Valley,CA,94941
Eva Knowles, Mill Valley,CA,94941
Paula Velasquez, Mill Valley,CA,94941
Chantel Beam, Mill Valley,CA,94941
Simon Allen, Mill Valley,CA,94941
Stacy Kibrick, Mill Valley,CA,94941
Manny Kaliontzakis, Mill Valley,CA,94941

Bete Pessoa, Mill Valley,CA,94941
Ryan Bruns, Mill Valley,CA,94941
Cristian Gorrino, Mill Valley,CA,94941
Josh McGarr, Mill Valley,CA,94941
Andrew Pearson, Sausalito,CA,94965
Tommy Means, Sausalito,CA,94965
Moselle Fredericks, Sausalito,CA,94965

Allison Friedenber, Sausalito,CA,94965

Frank Pinkson, Sausalito,CA,94965
Liz Hart, Sausalito,CA,94965
Maisie Mooney, Sausalito,CA,94965
Rick Jordan, Sausalito,CA,94965
Baily McDonald, Sausalito,CA,94965

Jack Knowles, Sausalito,CA,94965
Licita Fernandez, Sausalito,CA,94965
Laura Elze, Sausalito,CA,94965
Mark P, Sausalito,CA,94965
Susan Lilledahl, Sausalito,CA,94965
Chris Voy, Corte Madera,CA,94925
Kim Cheadle, Corte Madera,CA,94925

Assembly District 14

Yvonne Chan, Piedmont,CA,94610
Christina Schneck, Piedmont,CA,94611
Martha Truett, Oakland,CA,94611
Richard Stanley, Oakland,CA,94611
Lisa Maynard, Richmond,CA,94804
Simone LaCoss, Berkeley,CA,94705
Mike Vandeman, Berkeley,CA,94705
Ellen Toomey, Albany,CA,94706
Cynthia Carmichael, Berkeley,CA,94707
Valerie Herr, Berkeley,CA,94708
Mary McGann, Berkeley,CA,94709
Thomas Hall Mccord, Oakland,CA,94618

Roberta Schear, Oakland,CA,94618
Harvey Lapid, Oakland,CA,94618

Jim Cody, Oakland,CA,94618

David Abel, Oakland,CA,94618

David Hendsch, Oakland,CA,94618

Adam Byer, Oakland,CA,94618

Jill Ratner, Oakland,CA,94618

Paul Steckel, Oakland,CA,94618

Bob Whitehill, Oakland,CA,94618

Matthew Brown, Oakland,CA,94618

Mark Leonard, Oakland,CA,94618

Dan Kalb, Oakland,CA,94618

Adam Kaye, Oakland,CA,94618

Bill Cwynar, Oakland,CA,94618

Christopher Brown, Oakland,CA,94618

Samuel Lewis, Oakland,CA,94618

Jeff Burger, Oakland,CA,94618

Alex Amado, Oakland,CA,94618

Tony Auston, Oakland,CA,94618

Sidney Mullen, Oakland,CA,94618

Roger Gray, Oakland,CA,94618

Denis McGuirk, Oakland,CA,94618

Jeffrey Scofield, Oakland,CA,94618

Joseph Kramer, Oakland,CA,94618

Jared Blanton, Oakland,CA,94618

Don Clark, Oakland,CA,94618

William Worm, Oakland,CA,94618

Edward Jay, Oakland,CA,94618

Michael Stehr, Oakland,CA,94618

James Koniuto, Oakland,CA,94618

Helman Stern, Oakland,CA,94618

Jeffrey Randall, Oakland,CA,94618

Andrea Liguori, Oakland,CA,94618

Jere Johnson, Oakland,CA,94618

John Horsch, Oakland,CA,94618

David Tavernier, Oakland,CA,94618

Sam Barakat, Oakland,CA,94618

Pablo Voitzuk, Oakland,CA,94618

Daniel Zwicker, Oakland,CA,94618

Daniel Mason, Oakland,CA,94618

Robert Houghteling, Oakland,CA,94618

David Palmer, Oakland,CA,94618

Kenji Spencer, Oakland,CA,94618

Neil Kjeldsen, Oakland,CA,94618

James Lande, Oakland,CA,94618

Jeff Sykes, Oakland,CA,94618

Ken Schretzmann, Oakland,CA,94618

Gail Shafarman, Oakland,CA,94618

David Rich, Oakland,CA,94618
Joshua Redel, Oakland,CA,94618
Ken Bruckmeier, Oakland,CA,94618
Anthony Fenner, Oakland,CA,94618
Jack Van Den Bogaerde, Oakland,CA,94618

Harry Yuen, Berkeley,CA,94707
George Buffington, Berkeley,CA,94707
Stefano Marchesini, Berkeley,CA,94707
John Gertz, Berkeley,CA,94707
Geoffrey Haynes, Berkeley,CA,94707
Jim Barnard, Berkeley,CA,94707
John Gerard, Berkeley,CA,94707
Andre Fargeix, Berkeley,CA,94707
Richard Magid, Berkeley,CA,94707
Eric Hayashi, Berkeley,CA,94707
Jules Weiss, Berkeley,CA,94707
Paul Spinrad, Berkeley,CA,94707
Jason White, Berkeley,CA,94707
Mark Francis, Berkeley,CA,94707
Gary Nishita, Berkeley,CA,94707
Derek Young, Berkeley,CA,94707
David Gerrard, Berkeley,CA,94707
Tim Teninty, Berkeley,CA,94707

Robert Alter, Berkeley,CA,94708
Tom Williams, Berkeley,CA,94708
Alexander Brennan, Berkeley,CA,94708
Aaron Marcus, Berkeley,CA,94708
Ricardo Charles, Berkeley,CA,94708
Johnathan Rice, Berkeley,CA,94708
Dan Slobin, Berkeley,CA,94708
Christopher Becker, Berkeley,CA,94708
Michael Gillespie, Berkeley,CA,94708
Eric Arens, Berkeley,CA,94708
Philip Thomsett, Berkeley,CA,94708
Rob Firmin, Kensington,CA,94708
John Girhart, Berkeley,CA,94708
Mark Jasper, Berkeley,CA,94708
Scott Crocker, Berkeley,CA,94708
Andrew Gumperz, Berkeley,CA,94708
Matty Nematollahi, Berkeley,CA,94708
Nelson Sproul, Berkeley,CA,94708
Randall Hamilton, Berkeley,CA,94708
William Caruthers, Berkeley,CA,94708
Ray Barraza, Kensington,CA,94708
Conor Boughey, Berkeley,CA,94708
Mike Rerdon, Berkeley,CA,94709

David Smith, Berkeley,CA,94709

Tim Murphy, Berkeley,CA,94709

Phil Price, Berkeley,CA,94709

David Alport, Berkeley,CA,94709

Richard Harris, Berkeley,CA,94709

Edward Sellery, Berkeley,CA,94709

Andrew Jokelson, Berkeley,CA,94709

Richard Spitzer, Berkeley,CA,94709

Ted Feldsher, Berkeley,CA,94709

Takato Umeda, Berkeley,CA,94709

David Ceaser, Berkeley,CA,94710

Giovanni Pietrobon, Berkeley,CA,94710

Henry Raybrook, Berkeley,CA,94710

Hans Ashlock, Berkeley,CA,94710

Liliana Moncada, Berkeley,CA,94710

Michael Weil, Berkeley,CA,94710

Chris Lintlop, Berkeley,CA,94710

Carol Hayden, Berkeley,CA,94710

Jonathan Knight, Albany,CA,94706

Paul Oglesby, Albany,CA,94706

Boris Alekraniwrosky, Albany,CA,94706

John Patrick, Albany,CA,94706

Noah Weber, Albany,CA,94706

Doug Kagawa, Albany,CA,94706

Dan Wilcox, Albany,CA,94706

John Pillette, Albany,CA,94706

Brett Harvey, Albany,CA,94706

Christopher Hamilton, Berkeley,CA,94706

Stephen Carrillo, Albany,CA,94706

Robert Sypher, Albany,CA,94706

Steve Lucas, Albany,CA,94706

Leonard Edmondson, Albany,CA,94706

Michael Knott, Albany,CA,94706

David Blum, Albany,CA,94706

Robert Hodges, Berkeley,CA,94707

Richard Warren, Berkeley,CA,94707

Matt Jelen, Berkeley,CA,94707

Gary Koeppel, Berkeley,CA,94707

Charles Anderson, Berkeley,CA,94707

Roger Tong, Berkeley,CA,94707

Brian Levy, Berkeley,CA,94707

David Peattie, Berkeley,CA,94707

Michael Hanley, Berkeley,CA,94707

Craig Harper, Berkeley,CA,94707

Joel Altman, Berkeley,CA,94707

Eric Sprague, Kensington,CA,94707

Jeff Symonds, Berkeley,CA,94707
Giuseppe Di Palma, Berkeley,CA,94707
Stephen Alpert MD, Berkeley,CA,94707
Lonc Tran, Berkeley,CA,94707
Randall Cook, Berkeley,CA,94707
Richard Peterson, Berkeley,CA,94707
Tarek Milleron, Berkeley,CA,94707
Andre Julien, Berkeley,CA,94707
Scott Spear, Berkeley,CA,94707
Harry Delmer, Berkeley,CA,94707
Rudy Silva, Berkeley,CA,94707
Kevin Saxe, Berkeley,CA,94707
George Doue, Berkeley,CA,94707
Adam Green, Kensington,CA,94707
Joseph Holmes, Kensington,CA,94707
Christopher Warde, Berkeley,CA,94707
Karl Bemederfer, Berkeley,CA,94707
Chris Ertel, Berkeley,CA,94707
Joel Jacobs, Berkeley,CA,94707
Mason Carrillo, Berkeley,CA,94707
Jim Thede, Berkeley,CA,94707
John Muenchow, Berkeley,CA,94707
Paul Fujii, Berkeley,CA,94707

Nelson Planting, Berkeley,CA,94707
Karl Knobler, Berkeley,CA,94707
Eric Riley, Berkeley,CA,94707
Craig Lauxman, Berkeley,CA,94707
Wood Turner, Berkeley,CA,94707
Bruce Budner, Berkeley,CA,94707
Alan Wilkins, Kensington,CA,94707
Marty Kaufman, Berkeley,CA,94707
William Buchholz, Berkeley,CA,94707
Mike Vandeman, Berkeley,CA,94705
Jonathan Wachter, Berkeley,CA,94705
Phillip Leveen, Berkeley,CA,94705
Mark Arnold, Berkeley,CA,94705
Charles Rousell, Berkeley,CA,94705
Bryan Grziwok, Berkeley,CA,94705
Joshua Rothhaas, Berkeley,CA,94705
Ben Finkel, Berkeley,CA,94705
Darell Shepardson, Berkeley,CA,94705
Henry Abrons, Berkeley,CA,94705
Dave Room, Berkeley,CA,94705
Mike Hannigan, Berkeley,CA,94705
John Weil, Berkeley,CA,94705
James Kosz, Berkeley,CA,94705

Dan Lieberman, Berkeley,CA,94705
Michael Richards, Berkeley,CA,94705
Andrew Hatch, Berkeley,CA,94705
Kurt Bigler, Berkeley,CA,94705
Alan Wolf, Berkeley,CA,94705
Jon Kaufman, Berkeley,CA,94705
Michael Rubin, Berkeley,CA,94705
Dean Prater, Berkeley,CA,94705
Jimmy Yoo, Berkeley,CA,94705
Neil Doherty, Berkeley,CA,94705
Steven Wegmann, Berkeley,CA,94705
Barry Rosen, Berkeley,CA,94705
Robert Scott, Berkeley,CA,94705
Joseph Perkins, Berkeley,CA,94705
Peter Jacobson, Berkeley,CA,94705
Ted Obbard, Berkeley,CA,94705
John O'Shaughnessy, Berkeley,CA,94705

Robert Godes, Berkeley,CA,94705
Elliott Masouredis, Berkeley,CA,94705
Christopher Waldon, Berkeley,CA,94705
Bruce Wydick, Albany,CA,94706
David Wooley, Albany,CA,94706
Gary Weimberg, Albany,CA,94706

Andrew Weiner, Albany,CA,94706
Harry Chomsky, Albany,CA,94706
Andrew Falk, Albany,CA,94706
Leif Magnuson, Albany,CA,94706
Wayne Camirand, Albany,CA,94706
Mohan Sarovar, Albany,CA,94706
David Cobb, Albany,CA,94706
Frank Young, Albany,CA,94706
Barry Preisler, Albany,CA,94706
Zachary Dymiand, Berkeley,CA,94706
Eric Dupuis, Albany,CA,94706
Erik Stauber, Albany,CA,94706
Kristin Kelly, Albany,CA,94706
Doug Donaldson, Albany,CA,94706
John Bergmann, Albany,CA,94706
Eli Ateljevich, Albany,CA,94706
Thomas Urbania, Albany,CA,94706
Steven Temple, Albany,CA,94706
Donald Martin, Albany,CA,94706
Richard Cushman, Albany,CA,94706
Timothy Sears, Albany,CA,94706
James Acock, Albany,CA,94706
Patrick Burian, Albany,CA,94706

Roger Ramey, Albany,CA,94706

Sam Wong, Albany,CA,94706

Timmony LaBang, Berkeley,CA,94702

Art Pulaski, Berkeley,CA,94702

Robert Shashoua, Berkeley,CA,94702

Martin Hammer, Berkeley,CA,94702

Ian Kelso, Berkeley,CA,94702

Donald White, Berkeley,CA,94702

Ralph Nelson, Berkeley,CA,94702

Tom Lent, Berkeley,CA,94702

Jimmy Lyons, Berkeley,CA,94702

Phil Morton, Berkeley,CA,94702

Nate Brownlow, Berkeley,CA,94702

Sharon Feder, Berkeley,CA,94702

Gary Walker, Berkeley,CA,94702

Mario Longorin, Berkeley,CA,94702

William Hall, Berkeley,CA,94702

Peter Ferrary, Berkeley,CA,94702

David Leafhopper, Berkeley,CA,94702

Emir Husain, Berkeley,CA,94702

Dominic Valerian, Berkeley,CA,94702

Robert White, Berkeley,CA,94702

Benjamin Parisi, Berkeley,CA,94702

Michael Reading, Berkeley,CA,94702

James Lyons, Berkeley,CA,94702

Brian Rodvien, Berkeley,CA,94702

Neal Cassidy, Berkeley,CA,94702

Richard Entenman, Berkeley,CA,94702

Wouter Bruneel, Berkeley,CA,94702

Joshua Wyatt, Berkeley,CA,94702

Eli Fox, Berkeley,CA,94702

John Hagopian, Berkeley,CA,94702

Jason Gentry, Berkeley,CA,94702

Edwin Ghurnis, Berkeley,CA,94702

Arthur Mitchell, Berkeley,CA,94702

Michael Jeffe, Berkeley,CA,94702

Michael Mansfield, Berkeley,CA,94702

Steven Michaels, Berkeley,CA,94704

Jack Sawyer, Berkeley,CA,94704

Philip Keddy, Berkeley,CA,94704

Guy Brenner, Berkeley,CA,94704

Stephen Brown, Berkeley,CA,94704

Robert Dunn, Berkeley,CA,94705

Bruce Mac Dermott, Berkeley,CA,94705

Lionel Chocron, Berkeley,CA,94705

James Kelekian, Berkeley,CA,94705

Fred Block, Berkeley,CA,94705

Anne Bernstein, Berkeley,CA,94705

Mark Topinka, Berkeley,CA,94705

David de Figueiredo, Berkeley,CA,94705

Michael O'Day, Berkeley,CA,94705

Donald Simon, Berkeley,CA,94705

David Warren, Berkeley,CA,94705

Richard Levine, Berkeley,CA,94705

Steven Greenfield, Berkeley,CA,94705

Matt Specter, Berkeley,CA,94705

Howard Lunche, Berkeley,CA,94705

Jack Arnold, Berkeley,CA,94705

Mark Shaw, Berkeley,CA,94705

Ronny Gaal, Berkeley,CA,94705

Greg Urban, Berkeley,CA,94705

Eric Leimbach, Berkeley,CA,94702

Ronald Kojima, Berkeley,CA,94702

Thomas Manning, Berkeley,CA,94702

Gabriel Gomes, Berkeley,CA,94702

A. Burr Tyler, Berkeley,CA,94702

William Pettus, Berkeley,CA,94702

Denise Hingle, Berkeley,CA,94702

Grant Pezeshki, Berkeley,CA,94702

Roger Rosenblum, Berkeley,CA,94702

Jon Jackson, Berkeley,CA,94702

Christopher Hammond, Berkeley,CA,94702

Steve Wahlstrom, Berkeley,CA,94702

Michael Robbins, Berkeley,CA,94702

Jeffrey Grether, Berkeley,CA,94702

Eric Greenwald, Berkeley,CA,94702

Parker Grogan, Berkeley,CA,94702

Michael Khoury, Berkeley,CA,94702

Michael Fogelman, Berkeley,CA,94702

William Lloyd, Berkeley,CA,94703

Kamran Golriz, Berkeley,CA,94703

Gary Wren, Berkeley,CA,94703

Robert Silvey, Berkeley,CA,94703

Mark Sing, Berkeley,CA,94703

Marcel Serra, Berkeley,CA,94703

Erik Dreher, Berkeley,CA,94703

Sloan Fidler, Berkeley,CA,94703

John Franklin, Berkeley,CA,94703

Dennis Jarosch, Berkeley,CA,94703

Dwayne Wright, Berkeley,CA,94703

Edward Acosta, Berkeley,CA,94703

William Witort, Berkeley,CA,94703

Mark Van Valkenburgh, Berkeley,CA,94703

Bill Theobald, Berkeley,CA,94703

Michael Rubinstein, Berkeley,CA,94703

John Callway, Berkeley,CA,94703

Steven Levinson, Berkeley,CA,94703

Ed Reid, Berkeley,CA,94703

Julien Mercier, Berkeley,CA,94703

Tony Davenport, Berkeley,CA,94703

Eric Boulet, Berkeley,CA,94703

Mitchell Rose, Berkeley,CA,94703

Jerome Matthews, Berkeley,CA,94703

Ron Kyle, Berkeley,CA,94703

Sean Holbert, Berkeley,CA,94703

Peter Saltzman, Berkeley,CA,94703

Larry Le Paule, Berkeley,CA,94703

Greg Fisher, Berkeley,CA,94703

Darragh Perrow, Berkeley,CA,94703

Walter Crosier, Berkeley,CA,94703

Larry Cool, Berkeley,CA,94703

Elisabeth Perrow, Berkeley,CA,94703

Matthew Madison, Berkeley,CA,94703

Tim O'Brien, Berkeley,CA,94703

Mark Alverson, Berkeley,CA,94703

Richard Sultan, Berkeley,CA,94703

Mark McDonald, Berkeley,CA,94703

Ron Swanson, Berkeley,CA,94703

Patrick Gardner, Berkeley,CA,94703

Matthew Perry, Berkeley,CA,94703

Ryan Spalling, Berkeley,CA,94703

Peter Ciccolo, Berkeley,CA,94703

Greg Broxterman, El Cerrito,CA,94530

Daryl Van Fleet, El Cerrito,CA,94530

Michael Nietschy, El Cerrito,CA,94530

Mike Garber, El Cerrito,CA,94530

Patrick Curtin, El Cerrito,CA,94530

Mark Nakahara, El Cerrito,CA,94530

Julio Kaplan, El Cerrito,CA,94530

Michael Gest, El Cerrito,CA,94530

Milo Shogren, El Cerrito,CA,94530

Rahul Iyer, El Cerrito,CA,94530

David Van Ness, El Cerrito,CA,94530

Charles Hargrove, El Cerrito,CA,94530

Drew Enos, El Cerrito,CA,94530

Bruce Owen, El Cerrito,CA,94530

Victor Rotenberg, El Cerrito,CA,94530

Andrew Hertz, El Cerrito,CA,94530

Dingyu Zhou, El Cerrito,CA,94530
Dan Sanford, El Cerrito,CA,94530
Karl Pichler, El Cerrito,CA,94530
Robert Mc Nicholas, El Cerrito,CA,94530

Ellen McClure, El Cerrito,CA,94530
Anthony White, El Cerrito,CA,94530
Hun Ping Yeh, El Cerrito,CA,94530
Steve Ingraham, El Sobrante,CA,94803
Brett Morris, El Sobrante,CA,94803
Rob Waxman, Richmond,CA,94804
Ian Golder, Richmond,CA,94804
Michael Young, Richmond,CA,94804
Theodore Stenmark, Richmond,CA,94804

James Hayes, Richmond,CA,94804
Robert Garvey, Richmond,CA,94805
Chris Alberding, Richmond,CA,94805
David Kalins, Richmond,CA,94805
Thomas Janci, Richmond,CA,94805
Jonathan Cole, Richmond,CA,94805
John Rodriguez, Richmond,CA,94805
Eric Odell, Richmond,CA,94805
Phillip Mehas, Richmond,CA,94805

Michael Hogan, Richmond,CA,94805
Fred Andres, Richmond,CA,94805
Derek Reimer, Richmond,CA,94805
Robert Yellaud, Oakland,CA,94611
Mohammad Bazargani, Piedmont,CA,94611

John Soldavini, Oakland,CA,94611
Paul Manners, Oakland,CA,94611
Christopher Paul, Oakland,CA,94611
Russ Bloom, Oakland,CA,94611
Bob Dever, Oakland,CA,94611
Marvin Deal, Oakland,CA,94611
William Mattox, Oakland,CA,94611
Peter Markatos, Oakland,CA,94611
John Engstrom, Oakland,CA,94611
Nick Thomas, Oakland,CA,94611
George Lee, Oakland,CA,94611
David Bradley, Oakland,CA,94611
Patrick Klobas, Oakland,CA,94611
Charles Margulis, Oakland,CA,94611
Michael Weston, Oakland,CA,94611
Brent Timberlake, Oakland,CA,94611
David Duhl, Oakland,CA,94611
Stanley Marshall, Oakland,CA,94611

Redge Martin, Oakland,CA,94611
Michael Freund, Oakland,CA,94611
Sean Dougan, Oakland,CA,94611
Steven Siemers, Oakland,CA,94611
Jason Draut, El Cerrito,CA,94530
Damian Hayden, El Cerrito,CA,94530
Paul Vaughns, El Cerrito,CA,94530
David Concepcion, El Cerrito,CA,94530
Jeffrey Lichtman, El Cerrito,CA,94530
Marvin Vinik, El Cerrito,CA,94530
Quintin Moore, El Cerrito,CA,94530
Dirk Foermer, El Cerrito,CA,94530
John Thompson, El Cerrito,CA,94530
Don Smith, El Cerrito,CA,94530
Norman La Force, El Cerrito,CA,94530
Ken Jaffe, El Cerrito,CA,94530
Neil Gross, El Cerrito,CA,94530
Peter Bonde, El Cerrito,CA,94530
David Hopkins, El Cerrito,CA,94530
Sean Kellogg, El Cerrito,CA,94530
Tim Laidman, El Cerrito,CA,94530
Jeff Green, El Cerrito,CA,94530
Isabelle Bernal, El Cerrito,CA,94530

Michael Ricks, El Cerrito,CA,94530
Dennis Kettler, El Cerrito,CA,94530
Ray West, El Cerrito,CA,94530
Stephen Mann, El Cerrito,CA,94530
Robert MacDonald, El Cerrito,CA,94530
Steven Clemens, El Cerrito,CA,94530
John Bowman, El Cerrito,CA,94530
Fredric Kaye, El Cerrito,CA,94530
Thomas Insel, El Cerrito,CA,94530
David Lingren, El Cerrito,CA,94530
Ed Young, El Cerrito,CA,94530
Nathan Fueeling, El Cerrito,CA,94530
Eric Olsen, El Cerrito,CA,94530
Kevin Shambrook, El Cerrito,CA,94530
Rick Franco, Oakland,CA,94611
Paul Lipkin, Oakland,CA,94611
Paul Jahn, Piedmont,CA,94611
Gregory Redmond, Oakland,CA,94611
Dillon Tuckner, Oakland,CA,94611
Vince Reeve, Oakland,CA,94611
Gerard Green, Oakland,CA,94611
Paul Trueblood, Oakland,CA,94611
Michael Haddad, Oakland,CA,94611

Craig Huntington, Oakland,CA,94611

Michael Williams, Oakland,CA,94611

Martin Putnam, Oakland,CA,94611

Benjamin Worthen, Oakland,CA,94611

Kevin Ma, Oakland,CA,94611

Patrick Paulino, Oakland,CA,94611

Nathan Shaw, Oakland,CA,94611

Barry Shapiro, Oakland,CA,94611

Mark Johnson, Oakland,CA,94611

Tom Huffaker, Oakland,CA,94611

Stephen Wong, Oakland,CA,94611

Sunil Marangoly, Oakland,CA,94611

Stephen Selkowitz, Piedmont,CA,94611

Kurt Patzner, Oakland,CA,94611

Rande Webster, Oakland,CA,94611

Harland Chun, Oakland,CA,94611

Daniel Worm, Oakland,CA,94611

Jeff Hall, Oakland,CA,94611

Paul Knowlton, Oakland,CA,94611

Peter Towner, Oakland,CA,94611

Colby Kilgore, Piedmont,CA,94611

Bryan Mohany, Piedmont,CA,94611

Donald Lee, Oakland,CA,94611

Scott Koblitz, Oakland,CA,94611

William Wallace, Oakland,CA,94611

Lewis Finneberg, Oakland,CA,94611

Louis Jannace, Oakland,CA,94611

Tyson Schroeder, Oakland,CA,94611

Mark Wohlfarth, Oakland,CA,94611

John Calderwood, Oakland,CA,94611

Mary Woodrive, Oakland,CA,94611

Jonathan Ransohoff, Oakland,CA,94611

David McGhee, Oakland,CA,94611

Zach Murphy, Oakland,CA,94611

Nicolas Haralambides, Oakland,CA,94611

Jeffrey Blaney, Oakland,CA,94611

Fritz Wooster, Piedmont,CA,94611

Blaise Cumming, Oakland,CA,94611

Chad Ironside, Piedmont,CA,94611

Douglas Gorman, Oakland,CA,94611

Victor Ortiz, Oakland,CA,94611

John McClain, Oakland,CA,94611

Adam Bonner, Oakland,CA,94611

Brian Chrisman, Oakland,CA,94609

Julian James, Oakland,CA,94609

Dave Taubler, Oakland,CA,94609

Michael Mechanic, Oakland,CA,94609
Robert Ke vess, Oakland,CA,94609
Joseph Roll, Oakland,CA,94610
Evan Seevak, Piedmont,CA,94610
Mark Moss, Piedmont,CA,94610
John Holmgren, Piedmont,CA,94610
Grant Crossen, Piedmont,CA,94610
Bruce Maximov, Oakland,CA,94611
Bill Leahy, Piedmont,CA,94611
Steven Mandros Bell, Oakland,CA,94611

Henry Taylor, Piedmont,CA,94611
Mike Kidd, Oakland,CA,94611
James Stone, Oakland,CA,94611
Martin Ros, Oakland,CA,94611
Don Crum, Oakland,CA,94611
George Faucher, Oakland,CA,94611
Michael Pereira, Oakland,CA,94611
John D Menke, Piedmont,CA,94611
Robert Hartinger, Oakland,CA,94611
Timothy Ranahan, Oakland,CA,94609
Max Langert, Oakland,CA,94609
Liam Mullan, Oakland,CA,94609
Bernard Baltaxe, Oakland,CA,94609

Brian Yosef Schachter-Brooks,
Oakland,CA,94609

Jim Broadstreet, Oakland,CA,94609
Cynthia Abramov, El Cerrito,CA,94530
Andia Rasmussen, El Cerrito,CA,94530
Amy Bruckmeier, El Cerrito,CA,94530
Terri Ashton, Oakland,CA,94611
Catherine Johnson, Oakland,CA,94611
Carel Bertram, Oakland,CA,94611
Hope Salzer, Piedmont,CA,94611
Renee Cameto, Oakland,CA,94611
Jacqueline Van Lang, Piedmont,CA,94610

Lauren Phillips, Piedmont,CA,94611
Elizabeth Patelke, Oakland,CA,94618
Jean Rains, Oakland,CA,94618
Catherine Leonard, Kensington,CA,94708

Anya Davis, Berkeley,CA,94708
Pat Ungern, Berkeley,CA,94709
Chris Goldin, Berkeley,CA,94709
Lynn Quirolo, Albany,CA,94706
Dagmar Friedman, Berkeley,CA,94707
Stefanie Guynn, Berkeley,CA,94707
Emily Nozick, Berkeley,CA,94707

Patricia Phillips, Berkeley,CA,94705

Jan Volz-Kelly, Berkeley,CA,94705

Denise Lyons, Berkeley,CA,94702

Lois Smith, Berkeley,CA,94702

Pam Fisher, Berkeley,CA,94702

Deborah Sommers, Berkeley,CA,94702

Jan Probst, Berkeley,CA,94702

Judith Collier, Berkeley,CA,94702

Korina Florenz, Berkeley,CA,94702

Nadine Gerdes, Berkeley,CA,94702

Melanie Green, Berkeley,CA,94703

Dolores Taller, Berkeley,CA,94703

Leslie Moorjani, El Cerrito,CA,94530

Swee Quek, El Cerrito,CA,94530

Elizabeth Reimer, Richmond,CA,94805

Miriam Mangini, Oakland,CA,94611

Ysh Schwartz, Oakland,CA,94609

Kathleen Leslie, Oakland,CA,94609

Scotia Miller, Oakland,CA,94609

Adele Leporati, Oakland,CA,94609

Nicole Magnuson, Oakland,CA,94609

Holly Gundolfi, Oakland,CA,94609

Shana Sturm, Oakland,CA,94609

Deborah Fong, Oakland,CA,94609

Terri Walker, Oakland,CA,94609

Phyllis Plotkin, Oakland,CA,94609

Phyllis Plotkin, Oakland,CA,94609

June Anzai, Oakland,CA,94609

Adrienne Borgia, Oakland,CA,94609

Heather Ashcroft, Oakland,CA,94609

Marcia Vastine, Oakland,CA,94610

Lilly Krenn, Piedmont,CA,94610

Laura Przetak, Piedmont,CA,94610

Nancy Lenahan, Oakland,CA,94610

Elizabeth King, Piedmont,CA,94610

Cecelia Silva, Oakland,CA,94611

Marie Hogan, Oakland,CA,94611

Evangeline Brown, Oakland,CA,94611

Gail Truman, Oakland,CA,94611

Amy Buzick, Oakland,CA,94611

Karen Bixby, Piedmont,CA,94611

Judy Okolie, Oakland,CA,94611

Andrea Faber, Oakland,CA,94611

Joan Vanhorn, Oakland,CA,94611

Maria Cavallo, Oakland,CA,94611

Alexis Lavine, Oakland,CA,94611

Jane Klein, Oakland,CA,94611
Marianne Wagner, Oakland,CA,94611
Amy Smith, Oakland,CA,94611
Dorothy Black, Oakland,CA,94611
Linda Propert Sanford, Oakland,CA,94611

Susan JunFish, Oakland,CA,94611
Teri Jasman, Oakland,CA,94611
Amy Farnstrom, Oakland,CA,94611
Barbette Murphy, Oakland,CA,94611
Mary Norcross, Oakland,CA,94611
Deborah Parker, Oakland,CA,94611
Marian Baldwin, Oakland,CA,94611
Susan Troy, Oakland,CA,94611
Rebecca Hill, Oakland,CA,94611
June Monach, Piedmont,CA,94611
Susan Stephenson, Oakland,CA,94611
Barbara Koshkin, Oakland,CA,94611
Pamela Mercer, Piedmont,CA,94611
Anne Berry, Oakland,CA,94611
Kara Mirmelstein, Oakland,CA,94611
Victoria Shoemaker, Oakland,CA,94611
Lauren Thor, Oakland,CA,94611
Janis Falco, Oakland,CA,94611

Colleen Lang, Oakland,CA,94611
Jean Hansen, Piedmont,CA,94611
Helaine Pleet, Oakland,CA,94611
Evangeline Dee, Oakland,CA,94611
Autumn McDonald, Oakland,CA,94611
Suzanne Mcquado, Oakland,CA,94611
Frances Aubrey, Oakland,CA,94611
Angie Tadeo, Oakland,CA,94611
Victoria Robinsom, Oakland,CA,94611
Kathy Koshgarian, Oakland,CA,94611
Deborah Miller, Oakland,CA,94611
Marilyn Szabo, Oakland,CA,94611
Lara Hata, Oakland,CA,94611
Mary Clare Cawley, Oakland,CA,94611
Jennifer Wilson, Oakland,CA,94611
Patricia Leicher, Oakland,CA,94611
Clare Ludouina, Oakland,CA,94611
Sarah Puckett, Piedmont,CA,94611
Bridget Schreiber, Oakland,CA,94611
Debbie Mitchell, Oakland,CA,94611
Kathy Ennix, Oakland,CA,94611
Erin Forquer, Oakland,CA,94611
Lynne Rice, Piedmont,CA,94611

Sandra Stumbagh, Oakland,CA,94611
Michele Leavy, Oakland,CA,94611
Lisa Neville, Oakland,CA,94611
Margaret Shelleda, Oakland,CA,94611
Joyce Benna, Oakland,CA,94611
Sharon Pilmer, Oakland,CA,94611
Linda Permaul, Oakland,CA,94611
Kimberley Gilles, Oakland,CA,94611
Mimi Lou, Oakland,CA,94611
Danielle Wong Hookins, Oakland,CA,94611

Amy Hansen, Oakland,CA,94611
Josie Scruggs, Oakland,CA,94611
Jane Margold, Oakland,CA,94611
Marcia Gerrard, Piedmont,CA,94611
Jessica Strick, Oakland,CA,94611
Richard Granberg, Oakland,CA,94611
Valerie Villanueva, Piedmont,CA,94611
Sally Guzdar, Piedmont,CA,94611
Alexandra Charney, Oakland,CA,94611
Mary Sue Meads, Oakland,CA,94611
Edith Mills, Oakland,CA,94611
Annie Kersting, Piedmont,CA,94611
Sally Rubin, Oakland,CA,94611

Susan Chadwick, Oakland,CA,94611
Jennifer Hugenberg, Oakland,CA,94611
Roxanne Newman, Oakland,CA,94611
Eileen Tutt, Oakland,CA,94611
Dawn Pieper, Oakland,CA,94611
Cheryl Davis, Piedmont,CA,94611
Louise Corson, Oakland,CA,94611
Judith Valladao, El Cerrito,CA,94530
Lucy Smith, El Cerrito,CA,94530
Lisa Lease, El Cerrito,CA,94530
Linda Cain, El Cerrito,CA,94530
Barbara Beatrice, El Cerrito,CA,94530
Diane Davies, El Cerrito,CA,94530
Pam Singer, El Cerrito,CA,94530
Vivian Cheung, El Cerrito,CA,94530
Jeanne Frost, El Cerrito,CA,94530
Ada Fung, El Cerrito,CA,94530
Erin Reiche, El Cerrito,CA,94530
Ola Nordstrom, El Cerrito,CA,94530
Nathalie Babazaden, El Cerrito,CA,94530
Lisa Sterling, El Cerrito,CA,94530
Maureen Zuerner, El Cerrito,CA,94530

Erin Shuster, El Cerrito,CA,94530
Maryam Shapland, El Cerrito,CA,94530
Stephanie Oshiri, El Cerrito,CA,94530
Sue Akiyoshi, El Cerrito,CA,94530
Rhiannon Campbell, El Cerrito,CA,94530

Rory Craig, El Cerrito,CA,94530
Anna Salnikova, El Cerrito,CA,94530
Sabra Stepak, El Cerrito,CA,94530
Shana Walt, El Cerrito,CA,94530
Nancy Goolsby, El Cerrito,CA,94530
Rebecca Hoag, El Cerrito,CA,94530
Peggy Jones, El Cerrito,CA,94530
Elizabeth Carty, El Cerrito,CA,94530
Margaret Cohea, El Cerrito,CA,94530
Robin Stewart, El Cerrito,CA,94530
Toby Halpern, El Cerrito,CA,94530
Helen Dickey, El Cerrito,CA,94530
Tamara Williams, El Cerrito,CA,94530
Marie Muscardini, El Cerrito,CA,94530
Rosemary Blaylock, El Cerrito,CA,94530

Mimi Van Kirk, El Cerrito,CA,94530
Victoria Milnes, El Cerrito,CA,94530

Sarah Katten, El Cerrito,CA,94530
Sophia Owens, El Cerrito,CA,94530
Katie Rabinowitz, El Cerrito,CA,94530
Amber Richter, El Cerrito,CA,94530
Amanda Morrison, El Cerrito,CA,94530
Jennifer Gordon, El Cerrito,CA,94530
Debra Saunders, El Cerrito,CA,94530
Gina Barnes, El Cerrito,CA,94530
Sarah Sirchuk, El Cerrito,CA,94530
Elizabeth Nakahara, El Cerrito,CA,94530

Melinda Alagos, El Cerrito,CA,94530
Carol Katz, El Cerrito,CA,94530
Alice Towey, El Cerrito,CA,94530
Sandra Mulhearn, El Sobrante,CA,94803

Ariel Makow, El Sobrante,CA,94803
Deby Plaza, El Sobrante,CA,94803
Sara Theiss, Richmond,CA,94803
Mary Downs, El Sobrante,CA,94803
Ruth Block-Smith, Richmond,CA,94804
Yasmin Navarro, Richmond,CA,94804
Barbara Glendenning, Richmond,CA,94804

Cynthia Moe-Lobeda, Richmond,CA,94805

Janette Russey, Richmond,CA,94805
Madelyn Covey, Richmond,CA,94805
Mary Lou Van Deventer, Richmond,CA,94805

Karin Fisher-Golton, Richmond,CA,94805

Christine Hult-Lewis, Richmond,CA,94805

Audrey Webb, Richmond,CA,94805

Julia Goerlitz, Richmond,CA,94805

Susan Brand, Richmond,CA,94805

Andrea Burnett, Richmond,CA,94805

Rosalind Scott, Richmond,CA,94805

Jeanette Casarez, Richmond,CA,94805

Helen Clifton, Richmond,CA,94805

Susan Briston, Richmond,CA,94805

Constance Stasinopoulos,
Richmond,CA,94805

Sahib Amar K Khalsa, Richmond,CA,94805

Petra Daal, Richmond,CA,94805

Debbie Tenenbaum, Berkeley,CA,94703

Julia Danekas, Berkeley,CA,94703

Ruth Henrich, Berkeley,CA,94703

Hilary Goldman, Berkeley,CA,94703

Sandra Bishop, Berkeley,CA,94703

Pamela Belchamber, Berkeley,CA,94703

Heather Kostrezewa, Berkeley,CA,94703

Mimi Torres, Berkeley,CA,94703

Linda Arnold, Berkeley,CA,94703

Jeannie Witkin, Berkeley,CA,94703

Geraldine Nathan, Berkeley,CA,94703

Zoe Kalkanis, Berkeley,CA,94703

Teri Goodman, Berkeley,CA,94703

Hilda Johnston, Berkeley,CA,94703

Janine Johnson, Berkeley,CA,94703

Heather Ball, Berkeley,CA,94703

Jo Anne Welsch, Berkeley,CA,94703

Maria Skabardonis, Berkeley,CA,94703

Pamela Haenke-Clark, Berkeley,CA,94703

Ligia Giese, Berkeley,CA,94703

Kristin Primus, Berkeley,CA,94703

Elsie Phillips, Berkeley,CA,94703

Julianna Dickey, Berkeley,CA,94703

Melissa Lee, Ber,CA,94703

Fran Maris, Berkeley,CA,94703

Marian Berges, Berkeley,CA,94703
Jaqueline Beth, Berkeley,CA,94703
Kathleen Castillo, Berkeley,CA,94703
Cynthia Papermaster, Berkeley,CA,94703

Cecilia Bowman, Berkeley,CA,94703
Kathrine Randolph, Berkeley,CA,94703
Jane Maxwell, Berkeley,CA,94703
Anna Weidman, Berkeley,CA,94703
Beverly Allphin, Berkeley,CA,94703
Tamara Beliak, Berkeley,CA,94703
Rianne Lovett, Berkeley,CA,94703
Isabel Ribeiro, Berkeley,CA,94703
Deborah Lloyd, Berkeley,CA,94703
Gizzi Shoshana, Berkeley,CA,94703
Chloe Chaudhry, Berkeley,CA,94703
Sheila Jordan, Berkeley,CA,94703
Serina Garst, Berkeley,CA,94703
Claire Schoen, Berkeley,CA,94703
Lisa Esherick, Berkeley,CA,94703
Stephanie Piper, Berkeley,CA,94701
Emily Castelli, Berkeley,CA,94702
Sarah Matsumoto, Berkeley,CA,94702
Kimberly Livingston, Berkeley,CA,94702

Frances Lai, Berkeley,CA,94702
Mary Ann Wight, Berkeley,CA,94702
Gradiva Couzin, Berkeley,CA,94702
Susan Sherk, Berkeley,CA,94702
Catherine Lewis, Berkeley,CA,94702
Ellen Rigsby, Berkeley,CA,94702
Lisa London, Berkeley,CA,94702
Annemarie Miller, Berkeley,CA,94702
Dorothy Miao, Berkeley,CA,94702
Sheila Himmel, Berkeley,CA,94702
Anne Richards, Berkeley,CA,94702
Jasper Starbow, Berkeley,CA,94702
Deanna Mason, Berkeley,CA,94702
Jill Detweiler, Berkeley,CA,94702
Kellie Stoddart, Berkeley,CA,94702
Erika Larsson-Hall, Berkeley,CA,94702
Candice Schott, Berkeley,CA,94702
Beth Rockmill, Berkeley,CA,94702
Nancy Dills, Berkeley,CA,94702
Norma Myero, Berkeley,CA,94702
Bonnie Chan, Berkeley,CA,94702
Roya Arasteh, Berkeley,CA,94702
Peggy Radel, Berkeley,CA,94702

Barbara Tassielli, Berkeley,CA,94702
Judy Chadwick, Berkeley,CA,94702
Laura Garciamoreno, Berkeley,CA,94702

Norma J F Harrison, Berkeley,CA,94702
Sana Saleem, Berkeley,CA,94702
Andrea Jones, Berkeley,CA,94702
Patricia Narell, Berkeley,CA,94702
Asano Fertig, Berkeley,CA,94702
Kathryn Cherbini, Berkeley,CA,94702
Janet Madden, Berkeley,CA,94702
Liz Varnhagen, Berkeley,CA,94702
Patricia Maud Engel, Berkeley,CA,94702

Angela Bottum, Berkeley,CA,94702
Mary Lou Watson, Berkeley,CA,94702
Jessica Wheelis, Berkeley,CA,94702
Janice Ruchlis, Berkeley,CA,94702
Susan Kopman, Berkeley,CA,94702
Hannah Neff, Berkeley,CA,94702
Rachelle Reindl, Berkeley,CA,94702
Jill Jin, Berkeley,CA,94702
Patricia Williams, Berkeley,CA,94702
Silvia Korchumova, Berkeley,CA,94702

Bridgett Bernhard, Berkeley,CA,94702
Judy Daar, Berkeley,CA,94702
Sharon Peeples, Berkeley,CA,94702
Susan Sheftel, Berkeley,CA,94702
Julie Dickerson, Berkeley,CA,94702
Heather Wood, Berkeley,CA,94702
Stephanie Greer, Berkeley,CA,94702
Jennifer Love, Berkeley,CA,94702
Kristen Hopper, Berkeley,CA,94702
Charles Monroe, Berkeley,CA,94702
Susana Witte, Berkeley,CA,94702
Corinne Carlson, Berkeley,CA,94702
Margaret Allen, Berkeley,CA,94702
Carrie Hibbs, Berkeley,CA,94704
Cheryl Greenway, Berkeley,CA,94704
Pamela Jackson, Berkeley,CA,94704
Carla Woodworth, Berkeley,CA,94704
Kathryn Singh, Berkeley,CA,94704
Michelle Segre-Bergtraun, Berkeley,CA,94705

Julie Tippet, Berkeley,CA,94705
Laura Johnson, Berkeley,CA,94705
Lauren Jenson, Berkeley,CA,94705
Crystal Brunzell, Berkeley,CA,94705

Emily Dybwad, Berkeley,CA,94705
Esther Schroeder, Berkeley,CA,94705
Daria Nikolaeva, Berkeley,CA,94705
Donna Mickleson, Berkeley,CA,94705
Suzanna Cortes, Berkeley,CA,94705
Laura Cohen, Berkeley,CA,94705
Julia Rickers, Berkeley,CA,94705
Karen Smith, Berkeley,CA,94705
Gail Weinheimer, Berkeley,CA,94705
Melinda Marrchi, Berkeley,CA,94705
Linda Schacht, Berkeley,CA,94705
Kathryn Frank, Berkeley,CA,94705
Marcia Donahue, Berkeley,CA,94705
Lynn Zamarra, Berkeley,CA,94705
Barbara Perry, Berkeley,CA,94705
Laurie Soman, Berkeley,CA,94705
Maureen Mitzhellwise, Berkeley,CA,94705

Angela Jacobson, Berkeley,CA,94705
Margaret Ritchey, Berkeley,CA,94705
Nathalie Marie, Berkeley,CA,94705
Cindy Haag, Berkeley,CA,94705
Sally Hughes, Berkeley,CA,94705
Allegra Thompson, Berkeley,CA,94705

Nancy Salz, Berkeley,CA,94705
Kristin Luker, Berkeley,CA,94705
Orli Cotel, Berkeley,CA,94705
Catherine McNelley, Berkeley,CA,94705
Adam Harris, Berkeley,CA,94705
Chrissy Hoffman, Berkeley,CA,94705
Laura Marlin, Berkeley,CA,94705
Dori Rutkevitz, Berkeley,CA,94705
Tara Ellman, Berkeley,CA,94705
Elise Kneram, Berkeley,CA,94705
Marilyn Potter, Berkeley,CA,94705
Marguerite Conrad, Berkeley,CA,94705
Marcia Mcgaugh, Berkeley,CA,94705
Catherine Jordan, Berkeley,CA,94705
Susie Fazlollahi, Berkeley,CA,94705
Nina Katz, Berkeley,CA,94705
Erinn Nahid, Berkeley,CA,94705
Jeannie Yip, Berkeley,CA,94705
Susan Lilly, Berkeley,CA,94705
Rachel Antell, Berkeley,CA,94705
Gail Stewart, Berkeley,CA,94705
Ruth Bossieux, Berkeley,CA,94705
Donna Mandel, Berkeley,CA,94705

Michael Kong, Berkeley,CA,94705
Megan Garner, Berkeley,CA,94705
Helen Apthorp, Berkeley,CA,94705
Margaretta Mitchell, Berkeley,CA,94705
Holly Cole, Berkeley,CA,94705
Rani Marx, Berkeley,CA,94705
Martha Cain, Berkeley,CA,94705
Lindsay Mugglestone, Berkeley,CA,94705

Julia Tate, Berkeley,CA,94705
Maya Glenn, Berkeley,CA,94705
Joanna Macy, Berkeley,CA,94705
Thalia De Wolf, Berkeley,CA,94705
Barbara Thompson, Berkeley,CA,94705
Carol Ekberg, Berkeley,CA,94705
Tanya Spanier, Berkeley,CA,94705
Jean Ishimaru, Berkeley,CA,94705
Leanne Wydick, Albany,CA,94706
Diane Savage, Albany,CA,94706
Louise Berhau, Albany,CA,94706
Daisy Wu, Albany,CA,94706
Lisa De Elizalde Botha, Albany,CA,94706

Nancy Johnson, Albany,CA,94706

Carol Swann, Albany,CA,94706
Orca Starbuck, Albany,CA,94706
Deborah Godner, Albany,CA,94706
Amanda Goksel, Berkeley,CA,94706
Trina Rymland, Albany,CA,94706
Katherine Castro, Albany,CA,94706
Marilyn Hall, Albany,CA,94706
Lorraine Petti, Albany,CA,94706
Clementina Duron, Albany,CA,94706
Chris Luppino, Albany,CA,94706
Karen Carkhuff, Albany,CA,94706
Ann Higgins, Albany,CA,94706
Marie Monrad, Albany,CA,94706
Helene Class, Albany,CA,94706
Patrick Leonard, Albany,CA,94706
Adriana Macias, Albany,CA,94706
Janet Stock, Albany,CA,94706
Mariette Shin, Albany,CA,94706
Esther Dane, Albany,CA,94706
Becky Leyser, Albany,CA,94706
Joyce Rybandt, Albany,CA,94706
Alesia Alonso, Albany,CA,94706
Marion Russell, Albany,CA,94706

Elsie De Laere, Albany,CA,94706

Elena Czubiak, Albany,CA,94706

Ann Chaney, Albany,CA,94706

Diane Garcia, Albany,CA,94706

Peggy Harris, Albany,CA,94706

Deborah Georges, Berkeley,CA,94706

Marisa Beltrao, Albany,CA,94706

Jane Hara, Albany,CA,94706

Cheryl Cheu, Kensington,CA,94706

JoAnne Winter, Albany,CA,94706

Deborah Smith, Albany,CA,94706

Sarah Armstrong, Albany,CA,94706

Nancy Togami, Berkeley,CA,94706

Sandra Reid, Albany,CA,94706

Barbara Mann, Albany,CA,94706

Kendra Luck, Albany,CA,94706

Anitra Mehl, Albany,CA,94706

Katja Brose, Albany,CA,94706

Linda Berkowitz, Albany,CA,94706

Steven Lehman, Albany,CA,94706

Alice Mead, Albany,CA,94706

Maureen Burchert, Albany,CA,94706

Christine Seman, Albany,CA,94706

Ann Nutt, Albany,CA,94706

Ann Garrison, Albany,CA,94706

Christina Glendinning, Albany,CA,94706

Deb Nelson, Berkeley,CA,94707

Lisa Craib, Berkeley,CA,94707

Janna White, Berkeley,CA,94707

Deirdre Anderson, Berkeley,CA,94707

Irene Drapeau, Berkeley,CA,94707

Rebecca Peters, Berkeley,CA,94707

Wendy Wells, Berkeley,CA,94707

Vicki Cline, Berkeley,CA,94707

Freya Fuchs, Berkeley,CA,94707

Denise Wolf, Berkeley,CA,94707

Stephanie Thomas, Berkeley,CA,94707

Ellen Mc Donald, Berkeley,CA,94707

Gail Peterson, Berkeley,CA,94707

Dena Kefallinos, Berkeley,CA,94707

Frances Burgess, Berkeley,CA,94707

Ginny Preston, Berkeley,CA,94707

Marya Grosse, Berkeley,CA,94707

Linda DeLucchi, Berkeley,CA,94707

Laura Craft, Berkeley,CA,94707

Linda Dellucchi, Berkeley,CA,94707

Patricia Zambryski, Berkeley,CA,94707
Lisa Miner, Berkeley,CA,94707
Susan Harris, Berkeley,CA,94707
Karen Barker, Kensington,CA,94707
Madge Gahagan, Berkeley,CA,94707
Susanna Marshland, Berkeley,CA,94707
Kathleen King, Berkeley,CA,94707
Dayna Macy, Berkeley,CA,94707
Trang Robinson, Berkeley,CA,94707
Sheila Beeman, Berkeley,CA,94707
Patty Harper, Berkeley,CA,94707
Antonia Smith, Berkeley,CA,94707
Elyce Klein, Berkeley,CA,94707
Suzan Lundquist, Berkeley,CA,94707
Cynthia Hecker, Berkeley,CA,94707
Joyce Jackson, Albany,CA,94707
Bridget Clarke, Berkeley,CA,94707
Amy Easton, Berkeley,CA,94707
Amy Dominguez-Arms, Berkeley,CA,94707

Renee Jansen, Berkeley,CA,94707
Karen BorstRothe, Berkeley,CA,94707
Jane Anderson, Berkeley,CA,94707
Lewis Williams, Berkeley,CA,94707

Laura Howells, Berkeley,CA,94707
Phyllis Dolhinow, Berkeley,CA,94707
Stephanie Koester, Berkeley,CA,94707
Lory Stevenson, Berkeley,CA,94707
Paula Black, Berkeley,CA,94707
Carmen Cook, Kensington,CA,94707
Keren Stronach, Berkeley,CA,94707
Glennis Briggs, Berkeley,CA,94707
Ivy Sandz, Berkeley,CA,94707
Wendy Swiggett, Berkeley,CA,94707
Margaret Walker, Berkeley,CA,94707
Sylvia Townsend, Kensington,CA,94707
Joan Hollinger, Berkeley,CA,94707
Catherine Willis, Berkeley,CA,94707
Ann Shrieve, Berkeley,CA,94707
Rita Geary, Berkeley,CA,94707
Beth Katz, Berkeley,CA,94707
Sheila Duignan, Berkeley,CA,94707
Jessica Jones, Berkeley,CA,94707
Carol Strand, Berkeley,CA,94707
Amy Shen, Kensington,CA,94707
Nancy Nielson, Berkeley,CA,94707
Barbara Dilts, Kensington,CA,94707

Diana Bohn, Berkeley,CA,94707

Mary Kay Duggan, Berkeley,CA,94707

Martina Reaves, Berkeley,CA,94707

Zipporah Collins, Berkeley,CA,94707

Paula Aiello, Berkeley,CA,94707

Joan Cannon, Berkeley,CA,94707

Wendy Welsh, Berkeley,CA,94707

Linda Laskowski, Berkeley,CA,94707

Diane Johengen, Berkeley,CA,94707

Adrianne Bank, Berkeley,CA,94708

Sally Stephens, Berkeley,CA,94708

Brenna Stein, Berkeley,CA,94708

Paul Kurjiaka, Berkeley,CA,94708

Robin Galer, Berkeley,CA,94708

Maria Nucci, Berkeley,CA,94708

Emily Fox, Berkeley,CA,94708

Jessica Paolini, Berkeley,CA,94708

Arlene Taylor, Berkeley,CA,94708

Lenore Goldman, Berkeley,CA,94708

Jurdy Hughes, Berkeley,CA,94708

Alissa Mclean, Berkeley,CA,94708

Ciara Wood, Kensington,CA,94708

Susan Moss, Kensington,CA,94708

Margaret Mead, Kensington,CA,94708

Barbara Munker, Berkeley,CA,94708

Pamela Prince, Berkeley,CA,94708

Margaret Sparks, Berkeley,CA,94708

Irene Storch, Berkeley,CA,94708

Jean Krois, Berkeley,CA,94708

Sylvia Hacaj, Kensington,CA,94708

Susan Blair, Kensington,CA,94708

Cassandra Miller, Berkeley,CA,94708

Diana Tsoi, Berkeley,CA,94708

Mary Gventher, Berkeley,CA,94708

Andrea Lampros Fike, Berkeley,CA,94708

Joan Ominsky, Berkeley,CA,94708

Georgette Delraux, Berkeley,CA,94708

Michele Lombardo, Berkeley,CA,94708

Becky Handman, Berkeley,CA,94708

Jennifer Burt, Berkeley,CA,94708

Marsha McLeod, Berkeley,CA,94708

Annette Larue, Berkeley,CA,94708

Adina Rose, Berkeley,CA,94708

Corin Nedderson, Berkeley,CA,94708

Lois Fairley, Berkeley,CA,94708

Jill Loman, Berkeley,CA,94708

Winifred Ingham, Berkeley,CA,94708
Dawn Morris, Berkeley,CA,94708
Marilyn Schneck, Berkeley,CA,94708
Priscilla Rice, Berkeley,CA,94708
Abigail Eaton, Berkeley,CA,94708
Debra Melvin, Berkeley,CA,94708
Katherine Tonkyro, Berkeley,CA,94708
Coleen Eames, Kensington,CA,94708
Cynthia Stephan, Kensington,CA,94708
Ruth Brayton, Berkeley,CA,94708
Alicia Blowers, Berkeley,CA,94708
Kristina Grondahl, Berkeley,CA,94708
Christina Birch, Berkeley,CA,94708
Cheryl Kaiser Robertson, Berkeley,CA,94709

Rose Schweig, Berkeley,CA,94709
Diana Lawton, Berkeley,CA,94709
Joya Lom, Berkeley,CA,94709
Mary Jo Baumann, Berkeley,CA,94709
Rose Pietras, Berkeley,CA,94709
Karen Frasier-Kolligs, Berkeley,CA,94709

Patty Brink, Berkeley,CA,94709
Regina Dimaggio, Berkeley,CA,94709

Barbara Senllion, Berkeley,CA,94709
Joyce Tom, Berkeley,CA,94709
Sharondale King, Berkeley,CA,94709
Carol Laird, Berkeley,CA,94709
Linda Halpern, Berkeley,CA,94709
Rachel Pepper, Berkeley,CA,94709
Lucy Lewis, Berkeley,CA,94709
Karen Gabrielson, Berkeley,CA,94709
Evelyn Larsen, Berkeley,CA,94709
Naomi Caldwell, Berkeley,CA,94710
Mary Law, Berkeley,CA,94710
Anthea Engle, Berkeley,CA,94710
Peggy Wilson, Berkeley,CA,94710
Babette Jee, Berkeley,CA,94710
Sarah Swanson-Hysell, Berkeley,CA,94710

Cameron Olen, Berkeley,CA,94710
Jeanne Oconnor, Berkeley,CA,94710
Rachel Robson, Berkeley,CA,94710
Betty Harrison, Berkeley,CA,94710
Martha Hartzell, Berkeley,CA,94710
Liberty Winn, Berkeley,CA,94710
Victoria Bowen, Berkeley,CA,94710
Tamlyn Bright, Berkeley,CA,94710

Cecily Brewster, Berkeley,CA,94710

Manisha Gangopadhyay, Berkeley,CA,94710

Nicole Bush, Berkeley,CA,94710

Sarah Ejigu, Berkeley,CA,94710

Tobi Nagel, Oakland,CA,94618

Melissa Washburn, Oakland,CA,94618

Joyce Kelley, Oakland,CA,94618

Elizabeth Waterman, Oakland,CA,94618

Barbara Rhine, Oakland,CA,94618

Sarah Larson, Oakland,CA,94618

Katherine Miller, Oakland,CA,94618

Margaret Fancher, Oakland,CA,94618

Diane Olson, Oakland,CA,94618

Nancy DiRito, Oakland,CA,94618

Carole Klein, Oakland,CA,94618

Diana Pasquali, Oakland,CA,94618

Carol Strickman, Oakland,CA,94618

Suzanne Schafer, Oakland,CA,94618

Mary Smyer, Oakland,CA,94618

Karen Sternstein, Oakland,CA,94618

Lisa Rubens, Oakland,CA,94618

Pamela Perry, Oakland,CA,94618

Diane Ely, Oakland,CA,94618

Patricia Vargas, Oakland,CA,94618

Barbara Loomis, Oakland,CA,94618

Elizabeth Giardina, Oakland,CA,94618

Melissa Rossi, Oakland,CA,94618

Claire Oldani, Oakland,CA,94618

Sarah Milne, Oakland,CA,94618

Sophia Simpson Rochwerger,
Oakland,CA,94618

Cece Langs, Oakland,CA,94618

Loretta Esau, Oakland,CA,94618

Gretchen Scholtz, Oakland,CA,94618

Carol Kasperek, Oakland,CA,94618

Patty Bonsall, Oakland,CA,94618

Mozelle Scott-Bey, Oakland,CA,94618

Earll Kingston, Oakland,CA,94618

Marci Smith, Oakland,CA,94618

Krista Stoll, Oakland,CA,94618

Christine Frost, Oakland,CA,94618

Hilary Naylor, Oakland,CA,94618

Nicole Chapman, Oakland,CA,94618

Sandra Lessenden, Oakland,CA,94618

Roberta Stern, Oakland,CA,94618

Ruth Alahydoian, Oakland,CA,94618

Marsha Lohden, Oakland,CA,94618

Leslie Lethridge, Oakland,CA,94618

Eva Goode, Oakland,CA,94618

Nancy Sudren Mckay, Oakland,CA,94618

Mae Lum, Oakland,CA,94618

Toni Blackstone, Oakland,CA,94618

Deborah Murov, Oakland,CA,94618

Deborah Konar, Oakland,CA,94618

Colette Walker, Oakland,CA,94618

Carole Howard, Oakland,CA,94618

Krista Reinhard, Oakland,CA,94618

Maria Steinmann, Oakland,CA,94618

Della Barnett, Oakland,CA,94618

Carolyn Mahoney, Oakland,CA,94618

Judith Norberg, Oakland,CA,94618

Cindy Lee, Oakland,CA,94618

Gretchen Scholtz, Oakland,CA,94618

Ilona Einowski, Oakland,CA,94618

Kari Silverman, Oakland,CA,94618

Ruta Rakutis, Oakland,CA,94618

Cathy Schaefer, Oakland,CA,94618

Heather Tenney, Oakland,CA,94618

Ani Nayman, Oakland,CA,94618

Margaret McGuirk, Oakland,CA,94618

Barbara Cullinane, Oakland,CA,94618

Lizzy Patton, Oakland,CA,94618

Marsha Silverstein, Oakland,CA,94618

Tiara Douglas, Oakland,CA,94618

Demian Sims, Oakland,CA,94618

Shannon Elliot, Oakland,CA,94618

Samari Dickson, Oakland,CA,94618

Arturo Siguenza, Oakland,CA,94618

Christine Coleman, Oakland,CA,94618

Nisreen Hussain, Oakland,CA,94618

Effie Seiberg, Oakland,CA,94618

Ashley Jose, Oakland,CA,94618

S Cowles, Oakland,CA,94618

James Clambaeva, Oakland,CA,94618

Jesse Cool, Oakland,CA,94618

Blake Downing, Oakland,CA,94618

Jim Haedt, Oakland,CA,94618

John Irwin, Oakland,CA,94618

Kerry Compton, Oakland,CA,94618

Maril Wright, Oakland,CA,94618

Travis Johnson, Oakland,CA,94618

Matt Ewing, Oakland,CA,94618

Betty Stone, Oakland,CA,94618

Bill Kanemoto, Oakland,CA,94618

Megan Niedermeyer, Oakland,CA,94618

Soph Basalone, Oakland,CA,94618

Rafael Gonzalez, Oakland,CA,94618

Dylan Rosenberg, Oakland,CA,94618

Lee Schneider, Oakland,CA,94618

Brian Sigmond, Oakland,CA,94618

Mark Hopkins, Oakland,CA,94618

Danan Sudindranath, Oakland,CA,94618

Anastassia Babanska, Oakland,CA,94618

Stef Cohen, Berkeley,CA,94708

Abi Rudnick, Kensington,CA,94708

Finn Whelan, Berkeley,CA,94708

Drew Robb, Kensington,CA,94708

Marilyn Rangler, Berkeley,CA,94708

Michael Lewis, Berkeley,CA,94708

Sylvia Ricci, Berkeley,CA,94708

Herman Pecot, Berkeley,CA,94708

Filippos Michail, Berkeley,CA,94709

Jennings Ye, Berkeley,CA,94709

Joshua Stanka, Berkeley,CA,94709

Evelyn Oluoha Oluoha, Berkeley,CA,94709

Richard Boubelik, Berkeley,CA,94709

Troy Walker, Berkeley,CA,94709

David Von Damm, Berkeley,CA,94709

Marina Small, Berkeley,CA,94709

Taariq Smallman, Berkeley,CA,94709

Beatrice Melling, Berkeley,CA,94709

Diane Patropulos, Berkeley,CA,94709

Kim Gonzales, Berkeley,CA,94709

Matthew Finkelstein, Berkeley,CA,94709

Diane Davenport, Berkeley,CA,94709

Melissa Gutierrez, Berkeley,CA,94709

Jonas Powell, Berkeley,CA,94709

Paty Zelaya, Berkeley,CA,94710

Marit Brookkothlow, Berkeley,CA,94710

Lydia Shiozaki, Berkeley,CA,94710

Brian Macrae, Berkeley,CA,94710

Nelida Ortiz, Berkeley,CA,94710

William Liu, Berkeley,CA,94710

Laura McNall, Berkeley,CA,94710

Tamajee Ivy, Berkeley,CA,94710

Betty Harrison, Berkeley,CA,94710

Ryan Mitra, Berkeley,CA,94705

Lizzy Gobst, Berkeley,CA,94705

Mimi Main, Berkeley,CA,94705

Sylvie Richards, Berkeley,CA,94705

Noam Chocron, Berkeley,CA,94705

Marnie Kemp, Berkeley,CA,94705

Leslie Salzinger, Berkeley,CA,94705

Rinda Bartley, Berkeley,CA,94705

Frayda Simon, Berkeley,CA,94705

Taka Holmes, Berkeley,CA,94705

Frank Fuller, Berkeley,CA,94705

Robin Rice, Berkeley,CA,94705

Anonymous Donor, Albany,CA,94706

Amy McClanahan, Albany,CA,94706

Tsering Bhutia, Albany,CA,94706

Hokulani Valencia, Albany,CA,94706

Erica Wong, Albany,CA,94706

Dayne Hruska, Albany,CA,94706

Sashi Chadha, Albany,CA,94706

Archie Algas, Albany,CA,94706

Richard Entenman, Albany,CA,94706

Jose Oyola, Albany,CA,94706

Danielle Kraus, Albany,CA,94706

Mallory Landers, Albany,CA,94706

Ashley Washington, Albany,CA,94706

Daniel Maldonado, Albany,CA,94706

Olivia Wang, Albany,CA,94706

Meghan Elliott, Albany,CA,94706

Negeene Mosaed, Berkeley,CA,94707

Gregoire Jacquet, Berkeley,CA,94707

Michael Birkhead, Berkeley,CA,94707

Eytan Urbas, Berkeley,CA,94707

Nolan Lojo, Berkeley,CA,94707

Kelly Mc Donald, Berkeley,CA,94707

Jan Kleczewski, Berkeley,CA,94707

Gabriela Cozano, Berkeley,CA,94707

Sonam Thunden, Berkeley,CA,94707

Vijay Ramesh, Berkeley,CA,94707

Deborah Orosz, Berkeley,CA,94707

Richard Mallory, Berkeley,CA,94707

Alan Wilk, Berkeley,CA,94707

Madeleine Simpson, Berkeley,CA,94707

Penfan Sun, Berkeley,CA,94707

Ted Ted, Berkeley,CA,94707

Peter Sauer, Berkeley,CA,94707

Casey Crawmer, Berkeley,CA,94707

Juelann Klotz, Berkeley,CA,94707

Penny Peters, Berkeley,CA,94707
Jonah Rosenthal, Berkeley,CA,94707
Alex Luce, Berkeley,CA,94707
Jen Fugter, Berkeley,CA,94707
Letizia Gasparetti, Berkeley,CA,94707
Sady Hayoshioa, Berkeley,CA,94707
Brian Schlotterbeck, Berkeley,CA,94707
Jerome Jackson, Berkeley,CA,94708
Jordan Smilo, Berkeley,CA,94708
John Smith, Berkeley,CA,94708
Shawn Hu, Berkeley,CA,94708
Nathan Graves, Berkeley,CA,94708
Nickolaos Pappas, Berkeley,CA,94708
Kristin Leggett, Berkeley,CA,94708
Pearl Rakowski, Berkeley,CA,94708
Carmela Irwin, Berkeley,CA,94708
Rwlll Hasson, Berkeley,CA,94708
Jordan Harrison, Berkeley,CA,94702
Mallorie Baron, Berkeley,CA,94702
Jake Sazerhopf, Berkeley,CA,94702
Jan Lecklikner, Berkeley,CA,94702
Guadalupe Sarabia, Berkeley,CA,94702
Michele Manning, Berkeley,CA,94702

Ginger Morris, Berkeley,CA,94702
Rachel Furst, Berkeley,CA,94702
Elizabeth Cara, Berkeley,CA,94702
Mino De Angelis, Berkeley,CA,94702
Shay Lelinger, Berkeley,CA,94702
Kajal Gala, Berkeley,CA,94702
Rudabeh Pakravan, Berkeley,CA,94702
Kimi Owens, Berkeley,CA,94702
Lesley Mansur, Berkeley,CA,94702
Thomas Nguyen, Berkeley,CA,94702
Kyle Lee, Berkeley,CA,94702
Gerardo Moreno, Berkeley,CA,94702
Cessie Glenn, Berkeley,CA,94702
Tyger Caygill, Berkeley,CA,94702
Natan Kuchar, Berkeley,CA,94702
Kate Goyette, Berkeley,CA,94702
Jacob Lucas, Berkeley,CA,94702
Peretz Wolf-Prusan, Berkeley,CA,94702
Gayle Pirie, Berkeley,CA,94702
Jessica Wheelis, Berkeley,CA,94702
Dale Fanning, Berkeley,CA,94702
Liam Hicks-Kilday, Berkeley,CA,94702
Siler Panowski, Berkeley,CA,94702

Kim Klein, Berkeley,CA,94702
Whitney Singletary, Berkeley,CA,94702
Ed Valenzuela, Berkeley,CA,94702
Joe Sison, Berkeley,CA,94702
Ryan Fox, Berkeley,CA,94702
James Van Trump, Berkeley,CA,94702
Brianna Coffino, Berkeley,CA,94702
Brett Gabby, Berkeley,CA,94702
Niraj Khatod, Berkeley,CA,94702
Greg Waters, Berkeley,CA,94702
Berne Reuben, Berkeley,CA,94702
Sofia Labra, Berkeley,CA,94702
Sophia Thompson, Berkeley,CA,94702
Morgan Mettler, Berkeley,CA,94704
Christopher Gierlich, Berkeley,CA,94704
Lissett Bastidas, Berkeley,CA,94704
Toby Switek, Berkeley,CA,94704
Aaron Mackenzie, Berkeley,CA,94704
Mollie Mindel, Berkeley,CA,94704
Tom Mugglestone, Berkeley,CA,94705
Sudia Paloma Mccaleb, Berkeley,CA,94705

Nodpur Amin, Berkeley,CA,94705
Alina Miao, Berkeley,CA,94705

Adrian Mc Evilly, Berkeley,CA,94705
Ashley Wright, Berkeley,CA,94705
Jennifer Dwyer, Berkeley,CA,94705
Ryan Morello, Berkeley,CA,94705
Bonnie Stack, Berkeley,CA,94705
Christian Villegas, Berkeley,CA,94705
Maria Lipkina, Berkeley,CA,94705
Andrew Tomai, Berkeley,CA,94705
Haoyu Zhang, Berkeley,CA,94705
Roxanne Baggott, Berkeley,CA,94705
Julia Bourland, Berkeley,CA,94705
Simon Halland, Berkeley,CA,94705
Vika Teicher, Berkeley,CA,94702
Nhat Bui, Berkeley,CA,94702
Carolina Gardner, Berkeley,CA,94702
Elisa Hough, Berkeley,CA,94702
Torrey Mansur, Berkeley,CA,94702
James Angus, Berkeley,CA,94703
Anonymous Donor, Berkeley,CA,94703
Nari Rhee, Berkeley,CA,94703
Brad Sevener, Berkeley,CA,94703
Eric Rawn, Berkeley,CA,94703
Shawn Fritz, Berkeley,CA,94703

Nik Sonfield, Berkeley,CA,94703	Falecia Gospel, Richmond,CA,94805
Anonymous Donor, Berkeley,CA,94703	Felicitas Lyons, Richmond,CA,94805
Gabriel Holtmann, Berkeley,CA,94703	Joseph Golton, Richmond,CA,94805
Nitan Bali, Berkeley,CA,94703	Jampa Tashi, Richmond,CA,94805
Yazmin Chamu, Berkeley,CA,94703	Patrick McKenna, Richmond,CA,94805
Jacqueline Mansy, Berkeley,CA,94703	Bentley Regehr, Richmond,CA,94805
Sarah Adelman, Berkeley,CA,94703	Nathaniel Fariss, Richmond,CA,94805
Jannine Sabath, Berkeley,CA,94703	Robert Bassett, Richmond,CA,94805
Ionel Schwarz, Berkeley,CA,94703	John Pengra, Richmond,CA,94805
David Fisher, Berkeley,CA,94703	Patrick Purcell, Berkeley,CA,94703
Daniel Burley, Berkeley,CA,94703	Galadrielle Allman, Berkeley,CA,94703
John Franklin, Berkeley,CA,94703	Parsa Shabani, Berkeley,CA,94703
Guiseppe Di Palma, Berkeley,CA,94703	Shalini Satkunanandan, Berkeley,CA,94703
Sarah Kover, El Cerrito,CA,94530	Kim Christensen, Berkeley,CA,94703
Kim Pfabe, El Cerrito,CA,94530	Daniel Kalemi, Berkeley,CA,94703
Teresa Knight, Richmond,CA,94801	Tien Le, Berkeley,CA,94703
Jess Ceralde, El Sobrante,CA,94803	Pilar Kearney, Berkeley,CA,94703
Geryll Rusich, El Sobrante,CA,94803	Samuel Selleck, Berkeley,CA,94703
Joshua Powell, El Sobrante,CA,94803	Sofie Ledor, Berkeley,CA,94703
Lienard Brown, Richmond,CA,94804	Chris Witebsky, Berkeley,CA,94703
Shawn Mercy, Richmond,CA,94804	Jonus V, Berkeley,CA,94703
Jamie Lassalle, Richmond,CA,94804	Celeste Myers, Oakland,CA,94611
Andres Sanchez, Richmond,CA,94804	Joanna Van Dyk, Oakland,CA,94611

Betsy Murray, Oakland,CA,94611
Jill McCormick, Oakland,CA,94611
Molly Hill, Oakland,CA,94611
Wendy Muse Sinek, Oakland,CA,94611
Peter Federico, Oakland,CA,94611
Cristalle Irons, Oakland,CA,94611
Kelly Ellis, Oakland,CA,94611
David Rosenthal, Oakland,CA,94611
Rob Nolan, Oakland,CA,94611
Robin Irey, Oakland,CA,94611
Laban Jackson, Oakland,CA,94611
Pat Schwinn, Oakland,CA,94611
John Farrell, Oakland,CA,94611
Sal Smyth, Oakland,CA,94611
Sujata Bhattacharyya, Oakland,CA,94611
Elizabeth Erlich, Oakland,CA,94611
Chinwe Hinton, Oakland,CA,94611
Cullen Frandsen, Oakland,CA,94611
Puja Abud, Oakland,CA,94611
Barry Frascati James, Oakland,CA,94611

Morgan Muir, Oakland,CA,94611
Gautam Wadhwani, Oakland,CA,94611
Kelly Drumn, Oakland,CA,94611

Ram Woo, Piedmont,CA,94611
Stefanie Lew, Oakland,CA,94611
Katie Castles, Oakland,CA,94611
Ali Soli, Oakland,CA,94611
Gideon Wald, Oakland,CA,94611
Madysen Caine, Oakland,CA,94611
Anthony Gordon, Oakland,CA,94611
Tracy Ousdahl, El Cerrito,CA,94530
Susan Alward, El Cerrito,CA,94530
Saoirse Grohowski, El Cerrito,CA,94530
Emma Snyder, El Cerrito,CA,94530
Tony Grant, El Cerrito,CA,94530
Christine C, El Cerrito,CA,94530
Hiroki Terashima, El Cerrito,CA,94530
Dominique Brown, El Cerrito,CA,94530
Kim Laflin, El Cerrito,CA,94530
Samantha Scheib, El Cerrito,CA,94530
Tommie Mayfield, El Cerrito,CA,94530
Milan Sadjadi, El Cerrito,CA,94530
Mia Parsons, El Cerrito,CA,94530
Juavette Johansen, El Cerrito,CA,94530
Baldric Wat, El Cerrito,CA,94530
Devan Reiff, El Cerrito,CA,94530

Merrilea Songstad, El Cerrito,CA,94530

Mohan Lal, El Cerrito,CA,94530

James Lucas, El Cerrito,CA,94530

Tristan Lam, El Cerrito,CA,94530

Gayle Price, El Cerrito,CA,94530

Pavol Ivicic, El Cerrito,CA,94530

Courtney Walmsey, El Cerrito,CA,94530

Josh Tyler, El Cerrito,CA,94530

Yun-T Wang, El Cerrito,CA,94530

Pamela Fox, El Cerrito,CA,94530

Julian Shalaby, El Cerrito,CA,94530

Lee Kariuki, El Cerrito,CA,94530

Alejandra Planas, Oakland,CA,94609

Matt Albrecht, Oakland,CA,94609

Brian Jones, Oakland,CA,94609

Kathryn Leblanc, Oakland,CA,94609

Jocelyn Bailey, Oakland,CA,94609

Chien Want, Oakland,CA,94609

Anonymous Donor, Oakland,CA,94609

Bobbie Stein, Piedmont,CA,94610

Cherif Triki, Oakland,CA,94610

Joseph Aguiar, Oakland,CA,94611

Kim Kersh, Oakland,CA,94611

Jaiq Stein, Oakland,CA,94611

Richard Calabrese, Oakland,CA,94611

Michelle Branch, Oakland,CA,94611

Denage Marquis, Oakland,CA,94611

Steven Trevathan, Oakland,CA,94611

Suzanne Luu, Oakland,CA,94611

Brian Munden, Oakland,CA,94611

Sam Rubin, Oakland,CA,94611

Mark Rodini, Oakland,CA,94611

Michael Fedor, Oakland,CA,94611

Carole Dahl, Oakland,CA,94611

Bradford Lee, Oakland,CA,94611

Rick Riemer, Piedmont,CA,94611

Ahmer Srivastava, Oakland,CA,94611

Cassandera Rustledge, Oakland,CA,94611

Karin Gregg, Oakland,CA,94611

Melissa Rodriguez, Oakland,CA,94611

Sheridan Adams, Oakland,CA,94611

Ernest Mark, Oakland,CA,94611

Adam Gomolin, Oakland,CA,94611

Kacey Bridgman, Oakland,CA,94611

Lynn Glick, Oakland,CA,94611

Christine Butterfield, Oakland,CA,94611

Vivian Polishuk, Oakland,CA,94611

Daniel J, Oakland,CA,94611

Jamar Qyaise, Oakland,CA,94609

Heather Zulim, Oakland,CA,94609

Martine Johannessen, Oakland,CA,94609

Audrey Hudson, Oakland,CA,94609

Assembly District 16

Midori J Nishio, Lafayette ,CA ,94549

Roger Lamm, Walnut Creek ,CA ,94596

Marco Jennison, Walnut Creek ,CA ,94596

Jim Rife, Walnut Creek ,CA ,94597

Paul Damron, Walnut Creek ,CA ,94597

Alvin McLean, Walnut Creek ,CA ,94597

Daniel Klopstein, Walnut Creek ,CA ,94597

Ron Renirie, Walnut Creek ,CA ,94597

Rich Wieking, Walnut Creek ,CA ,94597

James Stevenson, Walnut Creek ,CA ,94597

Charles Askin, Walnut Creek ,CA ,94597

Scott Somers, Walnut Creek ,CA ,94598

H. W. Fawcett, Walnut Creek ,CA ,94598

Rick Stover, Walnut Creek ,CA ,94598

Danny Fried, Walnut Creek ,CA ,94598

Dennis Hwang, Walnut Creek ,CA ,94598

Elwood Lentz, Walnut Creek ,CA ,94598

David Beeby, Walnut Creek ,CA ,94598

Derek Lee, Walnut Creek ,CA ,94598

Clay Haswell, Walnut Creek ,CA ,94598

Janet Green, Walnut Creek ,CA ,94598

Dave Seaborg, Walnut Creek ,CA ,94598

Victor Ortiz, Walnut Creek ,CA ,94598

Adam Lazarus, Walnut Creek ,CA ,94595

John Cassani, Walnut Creek ,CA ,94595

Ted Holenan, Walnut Creek ,CA ,94595

John Patterson, Walnut Creek ,CA ,94595

Jerry Blair, Walnut Creek ,CA ,94595

Nancy West, Walnut Creek ,CA ,94595

Arthur Handly, Walnut Creek ,CA ,94596

Robert Griffith, Walnut Creek ,CA ,94596

Jonathan Rizzardi, Walnut Creek ,CA ,94596

Adam Peters, Walnut Creek ,CA ,94596

Reed Freeman, Walnut Creek ,CA ,94596

Rebecca Wiggins, Walnut Creek ,CA ,94596

Andre James, Walnut Creek ,CA ,94596

Robert Lumley, Walnut Creek ,CA ,94596

Stevan Cavalier, Walnut Creek ,CA ,94596

Ian Panlilio, Walnut Creek ,CA ,94596

Lenay Friedman, Walnut Creek ,CA ,94596

Douglas Magoon, Walnut Creek ,CA ,94596

Dennis Alumbaugh, Walnut Creek ,CA ,94596

Jack Goldner, Walnut Creek ,CA ,94596

Mark Borchardt, Walnut Creek ,CA ,94596

Jeff Johnson, Walnut Creek ,CA ,94596

Gerald Pleasant, Walnut Creek ,CA ,94596

Richard Wright, Walnut Creek ,CA ,94596

Linda Judd, Walnut Creek ,CA ,94596

Tricy Otten, Walnut Creek ,CA ,94596

Larry Bellows, Walnut Creek ,CA ,94596

Peter Stone, Walnut Creek ,CA ,94596

Gary Durbin, Walnut Creek ,CA ,94596

Stu Schuster, Walnut Creek ,CA ,94596

James Pinto, Orinda ,CA ,94563

Mike Vale, Orinda ,CA ,94563

Channing Jones, Orinda ,CA ,94563

Greg Kelly, Orinda ,CA ,94563

Luis Perez, Orinda ,CA ,94563

Nicholas Ross, Orinda ,CA ,94563

William Finzer, Orinda ,CA ,94563

Steve Westfall, Orinda ,CA ,94563

David Longanecker, Orinda ,CA ,94563

Andrew Amtmann, Orinda ,CA ,94563

Robert Schier, Orinda ,CA ,94563

Dan Rath, Orinda ,CA ,94563

Orlando Calderon, Orinda ,CA ,94563

Tom Downey, Orinda ,CA ,94563

David Reeves, Orinda ,CA ,94563

Richard Green, Orinda ,CA ,94563

Steven Johnson, Orinda ,CA ,94563

Todd Adler, Orinda ,CA ,94563

Robert Higgins, Orinda ,CA ,94563

Jack Andrews, Orinda ,CA ,94563

Filip Filippou, Orinda ,CA ,94563

Sam Tillis, Pleasanton ,CA ,94566
Steve Saldivar, Pleasanton ,CA ,94566
Adam Collins, Orinda ,CA ,94563
Jefferey Klingman, Orinda ,CA ,94563
Steve Austenfeld, Orinda ,CA ,94563
Brian Polivchak, Orinda ,CA ,94563
George Bergman, Orinda ,CA ,94563
Stewart Grace, Orinda ,CA ,94563
Raemon Earle, Orinda ,CA ,94563
David Cronin, Orinda ,CA ,94563
Mark Thompson, Orinda ,CA ,94563
Larry Crevin, Orinda ,CA ,94563
Tim Eliason, Orinda ,CA ,94563
Dave Rawcliffe, Pleasanton ,CA ,94566
David Cerqua, Pleasanton ,CA ,94566
John Cutler, Moraga ,CA ,94556
Clark Seal, Moraga ,CA ,94556
Steven Thaw, Moraga ,CA ,94556
Bill Lombardi, Danville ,CA ,94526
Charles Tonna, Lafayette ,CA ,94549
Don Kelsey, Lafayette ,CA ,94549
Bart Tangredi, Lafayette ,CA ,94549
Aaron White, Lafayette ,CA ,94549

Richard Carlson, Lafayette ,CA ,94549
Steven M Reilly, Lafayette ,CA ,94549
Ambrose Yau, Lafayette ,CA ,94549
Jeffrey Moore, Lafayette ,CA ,94549
Andrew Yost, Lafayette ,CA ,94549
Kyle Lind, Lafayette ,CA ,94549
John Tammen, Lafayette ,CA ,94549
Sanford Livingston, Lafayette ,CA ,94549
Thomas Halvorson, Lafayette ,CA ,94549
Justin Graham, Lafayette ,CA ,94549
Dennis Fink, Lafayette ,CA ,94549
Scott Baba, Lafayette ,CA ,94549
Jack Carney, Lafayette ,CA ,94549
Rory Snyder, Lafayette ,CA ,94549
Craig Latimer, Lafayette ,CA ,94549
Frederick Repetto, Lafayette ,CA ,94549
Gwenn Lennox, Lafayette ,CA ,94549
Monica Younghein, Danville ,CA ,94526
Vanessa Coker, Danville ,CA ,94526
Judith Jones, Lafayette ,CA ,94549
Barbara Plowman, Lafayette ,CA ,94549
Ellen Blinderman, Lafayette ,CA ,94549

Natalie Harnish, Lafayette ,CA ,94549
Rd Noble, Walnut Creek ,CA ,94597
Iris Magee, Walnut Creek ,CA ,94598
Tracey Seals, Walnut Creek ,CA ,94596
Heather Morgan, Walnut Creek ,CA ,94596

Rebecca Verity, Orinda ,CA ,94563
Louise Benvenue, Orinda ,CA ,94563
Katharine Barrett, Orinda ,CA ,94563
Morgan Mitchell, Pleasanton ,CA ,94566
Beth Eliason, Orinda ,CA ,94563
Janet Thibault, Orinda ,CA ,94563
Vanessa Mancebo, Lafayette ,CA ,94549

Patricia Flynn, Lafayette ,CA ,94549
Cinda Ely, Lafayette ,CA ,94549
Todd Hollenberg, Lafayette ,CA ,94549
Geraldine Yoes, Lafayette ,CA ,94549
Michelle Simonsen, Lafayette ,CA ,94549

Deborah Tallyn, Lafayette ,CA ,94549
Jennifer Cook, Lafayette ,CA ,94549
Cameryn Breen, Lafayette ,CA ,94549
Sue Zhang, Lafayette ,CA ,94549
Mary Chandler, Lafayette ,CA ,94549

Melissa Chatteroon, Lafayette ,CA ,94549

Leah Henrikson, Lafayette ,CA ,94549
Elaine Zahad, Lafayette ,CA ,94549
Ann Sherry, Lafayette ,CA ,94549
Leslee Baldwin, Lafayette ,CA ,94549
Judy Selland, Lafayette ,CA ,94549
Laura Heinrich, Lafayette ,CA ,94549
Jamie Spencer, Lafayette ,CA ,94549
Kristina Svensson, Lafayette ,CA ,94549
Marie Barton, Lafayette ,CA ,94549
Elma Lear, Lafayette ,CA ,94549
Claudia McCarthy, Lafayette ,CA ,94549
Susan Chritton, Lafayette ,CA ,94549
Elizabeth P. Lind, Danville ,CA ,94526
Carolyn Howard, Danville ,CA ,94526
Janet Fletcher, Danville ,CA ,94526
Cathy Mc Sweeny, Danville ,CA ,94526
Kathi Schwertscharf, Danville ,CA ,94526

Hui Zhang, Moraga ,CA ,94556
Clark Seal, Moraga ,CA ,94556
Deborah Standring, Moraga ,CA ,94556
Joan Zetterlund, Pleasanton ,CA ,94566

Loren Reynolds, Pleasanton ,CA ,94566
Debbi Burkholder, Pleasanton ,CA ,94566

Tara Rodarte, Pleasanton ,CA ,94566
Rennie Tomley, Pleasanton ,CA ,94566
Linda Allison, Pleasanton ,CA ,94566
Ida Hirst, Pleasanton ,CA ,94566
Mary Rottice, Orinda ,CA ,94563
Kathy Sylvester, Orinda ,CA ,94563
Ilana Fontes, Orinda ,CA ,94563
Gloria Schiller, Orinda ,CA ,94563
Grace Shandalov, Orinda ,CA ,94563
Nancy Peterson, Orinda ,CA ,94563
Rola Innis, Orinda ,CA ,94563
Karen Triest, Orinda ,CA ,94563
Leona Anderson, Orinda ,CA ,94563
Judith Marks, Orinda ,CA ,94563
Vicky Cheng, Orinda ,CA ,94563
Heather Kaeachi, Orinda ,CA ,94563
Laurie Heath, Orinda ,CA ,94563
Brandi Pearce, Orinda ,CA ,94563
Betty Whitlatch, Orinda ,CA ,94563
Cassandra Forth, Orinda ,CA ,94563
Julie Hoffman, Orinda ,CA ,94563

Gretchen Latimer, Orinda ,CA ,94563
Jane Hyde, Orinda ,CA ,94563
Nancy Shaw, Orinda ,CA ,94563
Genevieve Smith, Orinda ,CA ,94563
Maureen Shindle, Orinda ,CA ,94563
Michelle Jun, Orinda ,CA ,94563
Barbara Leslie, Orinda ,CA ,94563
Jillian Lundstrom, Orinda ,CA ,94563
Renee Dahms, Orinda ,CA ,94563
Johanna Trickovic, Orinda ,CA ,94563
Janice Fong, Orinda ,CA ,94563
Kathy Stuart-Hill, Walnut Creek ,CA ,94595

June Sardella, Walnut Creek ,CA ,94595
Janet Iwanaga, Walnut Creek ,CA ,94595

Sue Mason, Walnut Creek ,CA ,94596
Rosemary Simoncini, Walnut Creek ,CA ,94596
Kate Loftus, Walnut Creek ,CA ,94596
Cynthia Steiner, Walnut Creek ,CA ,94596

Jeri Aylward, Walnut Creek ,CA ,94596
Barb Erickson, Walnut Creek ,CA ,94596

Janet Rogers, Walnut Creek ,CA ,94596

Robyn Hetland, Walnut Creek ,CA ,94596

Donna Pilcher, Walnut Creek ,CA ,94596

Allison Mathews, Walnut Creek ,CA ,94596

Anna Liolgin, Walnut Creek ,CA ,94596

Elizabeth Winkelman, Walnut Creek ,CA ,94596

Jen Kokko, Walnut Creek ,CA ,94596

Cheryl Wolff, Walnut Creek ,CA ,94596

Lee Ann Sosa, Walnut Creek ,CA ,94596

Roxanne Holm, Walnut Creek ,CA ,94596

Eva Leung, Walnut Creek ,CA ,94596

Patrice Jensen, Walnut Creek ,CA ,94596

Marsha Sato, Walnut Creek ,CA ,94596

Alice Felix, Walnut Creek ,CA ,94597

Traute Greene, Walnut Creek ,CA ,94597

Sarah Pohl, Walnut Creek ,CA ,94597

Arlene Ferguson, Walnut Creek ,CA ,94597

Meredyth Young, Walnut Creek ,CA ,94597

Ara Minasian, Walnut Creek ,CA ,94598

Mary Kastner, Walnut Creek ,CA ,94598

Moira Chanese, Walnut Creek ,CA ,94598

Mary Ann Wittenberg, Walnut Creek ,CA ,94598

Kathleen Dillwood, Walnut Creek ,CA ,94598

Joan Friedman, Walnut Creek ,CA ,94598

Glenda Dugan, Walnut Creek ,CA ,94598

Fredi Foye-Helms, Walnut Creek ,CA ,94598

Karin Waggener, Walnut Creek ,CA ,94598

Cynthia Mataraso, Walnut Creek ,CA ,94598

Chelsea Bourell, Walnut Creek ,CA ,94595

Lesley Smith, Walnut Creek ,CA ,94595

Kathleen Ottaviano, Walnut Creek ,CA ,94596

Lu Einer, Walnut Creek ,CA ,94596

Anonymous Donor, Walnut Creek ,CA ,94596

Kamran Rassouli, Walnut Creek ,CA ,94596

Aaron Costa, Walnut Creek ,CA ,94596

Stacey Alexeeff, Walnut Creek ,CA ,94596

Stacy Hogue, Walnut Creek ,CA ,94596

Carston Niemeyer, Walnut Creek ,CA ,94596

Rob Johnson, Walnut Creek ,CA ,94596

Peri Gould, Walnut Creek ,CA ,94596

Bruce E, Walnut Creek ,CA ,94596

Tristan Jardini, Walnut Creek ,CA ,94596

Jeanette Elrod, Walnut Creek ,CA ,94596

Johanne Poulin, Walnut Creek ,CA ,94596

Bart Smith, Walnut Creek ,CA ,94596

Nancy Westermeyer, Walnut Creek ,CA ,94596

Azfar Haq, Walnut Creek ,CA ,94596

Carolyn Poetzsch, Walnut Creek ,CA ,94596

Aidin Sabet, Walnut Creek ,CA ,94596

Patrick Graney, Walnut Creek ,CA ,94596

Arjun Ra, Walnut Creek ,CA ,94596

Leo Carrillo, Walnut Creek ,CA ,94597

Mary Hruska, Walnut Creek ,CA ,94597

Connie Ferrando, Walnut Creek ,CA ,94598

Chris Giangregorio, Walnut Creek ,CA ,94598

David Franco, Walnut Creek ,CA ,94598

Corey Topper, Walnut Creek ,CA ,94598

Sj Mccann, Walnut Creek ,CA ,94598

Kelly Brown, Walnut Creek ,CA ,94598

Jon Garces, Walnut Creek ,CA ,94598

Matthew Rosenthal, Walnut Creek ,CA ,94598

Noel Berleman, Orinda ,CA ,94563

Bo Espinosa-Setchko, Orinda ,CA ,94563

Denise O'Shea, Orinda ,CA ,94563

Vanmai Tran, Orinda ,CA ,94563

David McGanney, Orinda ,CA ,94563

Julie Whatsitt, Orinda ,CA ,94563

Donna Mahoney, Orinda ,CA ,94563

Rosie Chester, Orinda ,CA ,94563

Cathlaine McGowan, Orinda ,CA ,94563

Reetta Raag, Orinda ,CA ,94563

Gavin Zylstra, Orinda ,CA ,94563

Lynn Barney, Orinda ,CA ,94563

Mary Rotticci, Orinda ,CA ,94563

MLiss Greenlee, Orinda ,CA ,94563

Bruce Schearer, Orinda ,CA ,94563
Shannon Pedroni, Orinda ,CA ,94563
Brett Hyden, Orinda ,CA ,94563
Kelly Tuggle, Orinda ,CA ,94563
Sean Munding, Orinda ,CA ,94563
Vidyaranya Devigere, Orinda ,CA ,94563

Dave Wright, Pleasanton ,CA ,94566
Spencer Ott, Pleasanton ,CA ,94566
Chris Beatty, Pleasanton ,CA ,94566
Yuh Ling Yasui, Pleasanton ,CA ,94566
Keller Strother, Moraga ,CA ,94556
Ruperf Dusauzay, Moraga ,CA ,94556
Scott Taylor, Moraga ,CA ,94556
Mark Rivera, Danville ,CA ,94526
Simon Calloway, Danville ,CA ,94526
Lee Halverson, Danville ,CA ,94526
A Edwards, Danville ,CA ,94526
Lorey Konieczny, Lafayette ,CA ,94549
Jory Dille, Lafayette ,CA ,94549
Laura-Kate Rurka, Lafayette ,CA ,94549
Jeffa Thomas, Lafayette ,CA ,94549
Adelmira Banuelos, Lafayette ,CA ,9454
Jennifer Kung, Lafayette ,CA ,94549

Devon Walton, Lafayette ,CA ,94549
Ronit Jorgensen, Lafayette ,CA ,94549
Jan Moreno, Lafayette ,CA ,94549
Eva Handlers, Lafayette ,CA ,94549
Garrett Wong, Lafayette ,CA ,94549
Jackie Marshall, Lafayette ,CA ,94549
Meighan Abolins, Lafayette ,CA ,94549
Assembly District 18
Victoria Hamman, San Francisco ,CA ,94114

Robert Gould, San Francisco ,CA ,94114

David Bogdanoff, San Francisco ,CA ,94131

Wayne De Jong, San Francisco ,CA ,94131

Michael Monley, San Francisco ,CA ,94131

Douglas Konecky, San Francisco ,CA ,94131

Warren Saunders, San Francisco ,CA ,94131

Robert Hinkson, San Francisco ,CA ,94131

Jason Mass, San Francisco ,CA ,94131
Michael Hennen, San Francisco ,CA ,94131

Sean Cafferty, San Francisco ,CA ,94131

Joseph Taylor, San Francisco ,CA ,94110

Marcus Keller, San Francisco ,CA ,94110

Daniel Mason, San Francisco ,CA ,94110

Mark Reynolds, San Francisco ,CA ,94110

Owen Whitmare, San Francisco ,CA ,94110

Jacob Smolowe, San Francisco ,CA ,94110

Tracy Wymer, San Francisco ,CA ,94110

Haldon Morgan, San Francisco ,CA ,94110

Tony Iluccy, San Francisco ,CA ,94110

Jim Hyden, San Francisco ,CA ,94110

Ted Desmarais, San Francisco ,CA ,94110

Clay Young, San Francisco ,CA ,94110

John Doll, San Francisco ,CA ,94110

Roger Lake, San Francisco ,CA ,94110

Will Arensman, San Francisco ,CA ,94110

Richard Perry, San Francisco ,CA ,94110

Daniel Steiger, San Francisco ,CA ,94110

Dennis Hayes, San Francisco ,CA ,94110

Paul McElvoy, San Francisco ,CA ,94110

William White, San Francisco ,CA ,94110

Carlos Egar Jr, San Francisco ,CA ,94110

David Wolf, San Francisco ,CA ,94110

Steven Braunstein, San Francisco ,CA ,94114

Andrew Gescheidt, San Francisco ,CA ,94114

Paul Reeberg, San Francisco ,CA ,94114

Anthony Falzone, San Francisco ,CA ,94114

Peter Harris, San Francisco ,CA ,94114

Robert Dellaporte, San Francisco ,CA ,94114

William Ehardt, San Francisco ,CA ,94114

Joseph Schmitz, San Francisco ,CA ,94114

Thomas Leahy, San Francisco ,CA ,94114

Richard Sides, San Francisco ,CA ,94114

Jiro Yamamoto, San Francisco ,CA ,94114

James Hicks, San Francisco ,CA ,94114

Ron Clark, San Francisco ,CA ,94114

Al Crowell, San Francisco ,CA ,94114

Colin Partridge, San Francisco ,CA ,94114

Matthew Schwartz, San Francisco ,CA ,94114

Kirby Counts, San Francisco ,CA ,94114

Jeffrey Manese, San Francisco ,CA ,94117

Jonelle Gausman, San Francisco ,CA ,94117

Karen Stradford, San Francisco ,CA ,94117

Tim Debenedictis, San Francisco ,CA ,94117

David Kelegian, San Francisco ,CA ,94107

Gregory Lynch, San Francisco ,CA ,94107

John Schwenger, San Francisco ,CA ,94107

Matt Brennan, San Francisco ,CA ,94107

Roberto Bonilla, San Francisco ,CA ,94107

Robert Miller, San Francisco ,CA ,94107

Donald Schell, San Francisco ,CA ,94107

Karrie Saehen, San Francisco ,CA ,94131

Linda Leonard, San Francisco ,CA ,94131

Shannon Latta, San Francisco ,CA ,94110

Karen Sutherlin, San Francisco ,CA ,94110

Elisabeth Peters, San Francisco ,CA ,94158

Erika Delacorte, San Francisco ,CA ,94107

Caren Funke, San Francisco ,CA ,94107

Laurel Rhoads, San Francisco ,CA ,94107

Grace Huenemann, San Francisco ,CA ,94107

Brittany Browning, San Francisco ,CA ,94107

Kimberly Floren, San Francisco ,CA ,94107

Gina Orofino, San Francisco ,CA ,94107

Emily Oinen, San Francisco ,CA ,94107

Linda Edelstein, San Francisco ,CA ,94107

Melinda Hall, San Francisco ,CA ,94107

Caroline Pulmer, San Francisco ,CA ,94107

Michele Hangee-Bauer, San Francisco ,CA ,94107

Laurie Herraiz, San Francisco ,CA ,94107

Victoria Cooke, San Francisco ,CA ,94107

Beth Garvey, San Francisco ,CA ,94110

Tanya Wischerath, San Francisco ,CA ,94110

Simmy Cover, San Francisco ,CA ,94110

Elia Meza, San Francisco ,CA ,94110

Kit Robberson, San Francisco ,CA ,94110

Catherine Art, San Francisco ,CA ,94110

Linda Weiner, San Francisco ,CA ,94110

Pauline Scott, San Francisco ,CA ,94110

Josephine Ramos, San Francisco ,CA ,94110

Sara Schaer, San Francisco ,CA ,94110

Gina Solomon, San Francisco ,CA ,94110

Barbara Barnes, San Francisco ,CA ,94110

Catherine Merrill, San Francisco ,CA ,94110

Jenifer Sims, San Francisco ,CA ,94110

Debra Murov, San Francisco ,CA ,94110

Maura Duggan, San Francisco ,CA ,94110

Susan Lamagna, San Francisco ,CA ,94110

Gwen Sidley, San Francisco ,CA ,94110

Margaret Weis, San Francisco ,CA ,94110

Lillian Reidy, San Francisco ,CA ,94110

Helen Norris, San Francisco ,CA ,94110

Barbara Attard, San Francisco ,CA ,94110

Karen Curtiss, San Francisco ,CA ,94110

Traci Boyle, San Francisco ,CA ,94110

Joanne Churchill, San Francisco ,CA ,94110

Susan Wong, San Francisco ,CA ,94110

Doris Flaherty, San Francisco ,CA ,94110

Mary McManamon, San Francisco ,CA ,94114

Edward Davidson, San Francisco ,CA ,94114

Sarah Nuernberger, San Francisco ,CA ,94114

Rhona O'Leary, San Francisco ,CA ,94114

Nina Krietzman, San Francisco ,CA ,94114

Melody Knight, San Francisco ,CA ,94114

Jessie Howell, San Francisco ,CA ,94114

Michelle Pampin, San Francisco ,CA ,94114

Ann Zuppann, San Francisco ,CA ,94114

Karen Klein, San Francisco ,CA ,94114

Alison Kelman, San Francisco ,CA ,94114

Susan Torres, San Francisco ,CA ,94114

Elaine Bitzel, San Francisco ,CA ,94114

Susan Green, San Francisco ,CA ,94114

Lisa Matthews, San Francisco ,CA ,94114

Rochelle Gottlieb, San Francisco ,CA ,94114

Linda Gorham, San Francisco ,CA ,94114

Lois Feller, San Francisco ,CA ,94114

Angie Zarikos, San Francisco ,CA ,94114

Constance Ferris Meyer, San Francisco ,CA ,94114

Donna Calame, San Francisco ,CA ,94114

Linda Marchi, San Francisco ,CA ,94114

Siri Margerin, San Francisco ,CA ,94117

Karen Ulring, San Francisco ,CA ,94117

Chloe A Milne, San Francisco ,CA ,94117

Carolynn Martin, San Francisco ,CA ,94117

Mary T Zablotny, San Francisco ,CA ,94117

Rene Yung, San Francisco ,CA ,94131

Norma Chew, San Francisco ,CA ,94131

Carol Savary, San Francisco ,CA ,94131

Patricia Caplan, San Francisco ,CA ,94131

Diana Rothermel, San Francisco ,CA ,94131

Kathleen Pabst, San Francisco ,CA ,94131

Mary Pitts, San Francisco ,CA ,94131

Pamela Koe, San Francisco ,CA ,94131

Elizabeth Erdos, San Francisco ,CA ,94131

Lorraine Aiken, San Francisco ,CA ,94131

Marilee Hearn, San Francisco ,CA ,94131

Barbara Coffey, San Francisco ,CA ,94131

Patricia Busk, San Francisco ,CA ,94131

Adam Felling, San Francisco ,CA ,94131

Jake Saliba, San Francisco ,CA ,94131

Robin Smith, San Francisco ,CA ,94131

Tom Bodenheimer, San Francisco ,CA ,94131

Abra Williams, San Francisco ,CA ,94131

Matt Forman, San Francisco ,CA ,94131

Johnson Livingston, San Francisco ,CA ,94110

Elias Colfax, San Francisco ,CA ,94110

Dina Martin, San Francisco ,CA ,94110

Yann Kerherve, San Francisco ,CA ,94110

Ron Longinotti, San Francisco ,CA ,94110

Cam Crary, San Francisco ,CA ,94110

Keli Wong, San Francisco ,CA ,94110

Nick Scheer, San Francisco ,CA ,94110

Torsten Christian, San Francisco ,CA ,94110

Leah Procopi, San Francisco ,CA ,94110

Kim McGee, San Francisco ,CA ,94110

Joseph Saginaw, San Francisco ,CA ,94110

Montana Stearns Ayster, San Francisco ,CA ,94110

Micheal Rodgers, San Francisco ,CA ,94110

Leo Milles, San Francisco ,CA ,94110

Anjal Pong, San Francisco ,CA ,94110

Keyvon Silva, San Francisco ,CA ,94110

Devante Horne, San Francisco ,CA ,94110

Liz Monore, San Francisco ,CA ,94110

Mercedes Cordero, San Francisco ,CA ,94110

James McKinney, San Francisco ,CA ,94110

Ben Obrock, San Francisco ,CA ,94110

Katherine Eddinger, San Francisco ,CA ,94110

Isaac Boss, San Francisco ,CA ,94110
Kathryn Jensen, San Francisco ,CA ,94110

Alex Currit, San Francisco ,CA ,94110
Addy Williams, San Francisco ,CA ,94110

Georrge Owyang, San Francisco ,CA ,94110

Ethan Wynne-Wade, San Francisco ,CA ,94110
Tal Honig, San Francisco ,CA ,94110
Nina Fujikawa, San Francisco ,CA ,94110

Melissa Kennedy, San Francisco ,CA ,94110

Richard Bonomi, San Francisco ,CA ,94110

Warren Gasper, San Francisco ,CA ,94114

Owen Christoph, San Francisco ,CA ,94114

Anonymous Donor, San Francisco ,CA ,94114

Peter Golbetz, San Francisco ,CA ,94114

Joshua Caron, San Francisco ,CA ,94114

Jan Boichel, San Francisco ,CA ,94114

Ninive Calegari, San Francisco ,CA ,94114

Sisse Leegaard, San Francisco ,CA ,94114

Anonymous Donor, San Francisco ,CA 94114

Megan Aldridge, San Francisco,CA ,94114

Tanya Ivanov, San Francisco,CA 94114
Debbie Mobley, San Francisco ,CA ,94114

Claire Batista, San Francisco ,CA ,94114

Gregory Egan, San Francisco ,CA ,94114

Chris Mancini, San Francisco ,CA ,94114

Sophia Woods, San Francisco ,CA ,94114

Katie M, San Francisco ,CA ,94114
Cooper Knutson, San Francisco ,CA ,94114

Kelly Mullin, San Francisco ,CA ,94114
Chiko Nog, San Francisco ,CA ,94114
Vincent Po, San Francisco ,CA ,94114
Basia Gorska, San Francisco ,CA ,94115

Oliver Montaga, San Francisco ,CA ,94107

Camille Smith, San Francisco ,CA 94118

Mary Powell, San Francisco ,CA 94131

Carrie Singleton, San Francisco ,CA 94131

Dana Isaac, San Francisco ,CA 94131

Thea Stoller, San Francisco ,CA 94131

Stacy Bissell, San Francisco ,CA 94131

Si Lead, San Francisco ,CA 94117

Shy Baniani, San Francisco ,CA 94117

Eliana Baskouta, San Francisco ,CA 94117

Evan Owski, San Francisco ,CA 94117

Cheyenne Belmont, San Francisco ,CA 94117

Jordan Kline, San Francisco ,CA 94117

Kieran Maesaka, San Francisco ,CA 94118

Baylie Fuller, San Francisco ,CA 94118

Brittany Rogers, San Francisco ,CA 94118

Therese Folco, San Francisco ,CA 94118

Kalyxa Roman, San Francisco ,CA 94118

Nathan Nkemere, San Francisco ,CA 94117

Glenda Dayao, San Francisco ,CA ,94107

Daniel Padilla, San Francisco ,CA ,94107

Jeff Sand, San Francisco,CA 94107

Stephanie Arend, San Francisco ,CA 94107

Daniel Gill, San Francisco ,CA ,94107

Assembly District 19

Greg Dunham, San Francisco ,CA 94117

Claudio Salusso, San Francisco ,CA 94118

Cynthia Koster, San Francisco ,CA 94118

Emily LaRocca, San Francisco ,CA 94118

Emma Ziegler, San Francisco ,CA 94118

Jean Johnson, San Francisco ,CA 94118

A. Alessandra, San Francisco ,CA 94118

Emily Risk, San Francisco ,CA 94118

Christine Linnenbach, San Francisco ,CA 94118

Sarah Croteau, San Francisco ,CA 94118

Aj Gabriel, San Francisco ,CA 94117

Assembly District 20

Tim Holmes, San Leandro ,CA 94577

Colin Neunuebel, San Leandro ,CA 94577

Jeremy Ouellette, San Leandro ,CA 94577

Tom Stone, San Leandro ,CA 94577

Art Galicia, San Leandro ,CA 94577

Alan Marcus, San Leandro ,CA 94577

James Bennett, San Leandro ,CA 94577

Raymond Mac, San Leandro ,CA 94577

Jay Slean, San Leandro ,CA 94577

Darryl Gaines, San Leandro ,CA 94577

Greg Brown, San Leandro ,CA 94577

Eric Bahm, San Leandro ,CA 94577

Don Patterson, San Leandro ,CA 94577

Thomas Huetteman, San Leandro ,CA 94577

Joseph Sartelle, San Leandro ,CA 94577

William Berystrom, San Leandro ,CA 94577

Owen Rubin, San Leandro ,CA 94577

Barry Grushkowitz, San Leandro ,CA 94577

Mike Gomez Jr, San Leandro ,CA 94577

Robert Disilverio, San Leandro ,CA 94577

Martin Vitz, San Leandro ,CA 94577

David Bardoff, San Leandro ,CA 94577

Keith Robertson, San Leandro ,CA 94577

George Mamoulelis, San Leandro ,CA 94577

Pete Murakami, San Leandro ,CA 94577

Daniel Hinckley, San Leandro ,CA 94577

Benjamin Guerrero, San Leandro ,CA 94577

Grant Gladman, San Leandro ,CA 94577

Damien Sykes, San Leandro ,CA 94577

Rebecca Delaney, San Leandro ,CA 94577

Rachel Fenyves, San Leandro ,CA 94577

Jacquelyn Diaz, San Leandro ,CA 94577

Patty Vonnegut, San Leandro ,CA 94577

Margaret Howard, San Leandro ,CA 94577

Elizabeth Ross, San Leandro ,CA 94577

Carol Suto, San Leandro ,CA 94577

Nancy Kocot, San Leandro ,CA 94577

Valerie Bogdanos, San Leandro ,CA 94577

Tracie Kinser, San Leandro ,CA 94577

Carole Wright, San Leandro ,CA 94577

Constance Silva, San Leandro ,CA 94577

Sharon Morris, San Leandro ,CA 94577

Sandra Godfrey, San Leandro ,CA 94577

Leticia Serna, San Leandro ,CA 94577

Jenny Murdoff, San Leandro ,CA 94577

Marta Calvo, San Leandro ,CA 94577

Chloe Santos, San Leandro ,CA 94577

Emily Rich, San Leandro ,CA 94577

Cheryl Shonnard, San Leandro ,CA 94577

Maureen Spranza, San Leandro ,CA 94577

Tiffany Howell, San Leandro ,CA 94577

Kathy Dubuque, San Leandro ,CA 94577

Jackie Vogelsang, San Leandro ,CA 94577

Cynthia Davies, San Leandro ,CA 94577

Angele Zacarias, San Leandro ,CA 94577

Alexandria Johnson, San Leandro ,CA 94577

Kathryn Gholson, San Leandro ,CA 94577

Richard Willie, San Leandro ,CA 94577

Charles O'Connor, San Leandro ,CA 94577

Aniesha Sapp, San Leandro ,CA 94577

Alexis Underwood, San Leandro ,CA 94577

Karen Difrummolo, San Leandro ,CA 94577

Ravi Whitworth, San Leandro ,CA 94577

Brittany Hodges, San Leandro ,CA 94577

Laila Thompson, San Leandro ,CA 94577

Jennifer Heller, San Leandro ,CA 94577

Lorin Peters, San Leandro ,CA 94577

Julian Quaye, San Leandro ,CA 94577

Jean Richardson, San Leandro ,CA 94577

Mary Barloga, San Leandro ,CA 94577

Patricia Yazolino, San Leandro ,CA 94577

Diane Neptune, San Leandro ,CA 94577

Scott Mullin, San Leandro ,CA 94577

Rienie Bartolini, San Leandro ,CA 94577

Ken Harris, Redwood City ,CA 94061

Frank Skoglund, Redwood City ,CA 94061

Christopher Hollstein, Redwood City ,CA 94061

Justin Hand, Redwood City ,CA 94061

Steve Leonard, Redwood City ,CA 94061

Assembly District 21

Michael Pickett, Menlo Park ,CA 94025

Glen Bethel, Palo Alto ,CA 94303

Ron Garbez, Menlo Park ,CA 94025

James Kearney, Menlo Park ,CA 94025

Jeff McGinnis, Palo Alto ,CA 94303

Dan Mau, Redwood City ,CA 94061

Brad Toussaint, Redwood City ,CA 94061

Thomas Cincotta, Redwood City ,CA 94061

Edward Greenwald, Redwood City ,CA 94061

James Boyson, Redwood City ,CA 94061

James D Jurow, Redwood City ,CA 94061

Humberto Perez, Redwood City ,CA 94061

Kurt Hemmingsen, Redwood City ,CA 94061

Robert Olson, Redwood City ,CA 94062

David Strausberg, Redwood City ,CA 94062

Cohen Guy, Emerald Hills ,CA 94062

Thomas Kavanaugh, Redwood City ,CA 94062

Cal Sloan, Redwood City ,CA 94062

Wallace Bradford, Redwood City ,CA 94062

Tom Lyons, Redwood City ,CA 94062

Marc Beban, Redwood City ,CA 94062

Raymundo Ortiz, Redwood City ,CA 94062

Mark Moucton, Emerald Hills ,CA 94062

Chad Reade, Redwood City ,CA 94062

Adam Brown, Redwood City ,CA 94062

Cory Place, Redwood City ,CA 94062

Randy Engler, Redwood City ,CA 94062

Donald Johnson, Redwood City ,CA 94062

Hector Barragan, Redwood City ,CA 94062

Michael Wenz, Redwood City ,CA 94062

John Pinkston, Atherton ,CA 94027

John Pink, Redwood City ,CA 94062

Annie Walker, Redwood City ,CA 94062

Sydney Graham, Redwood City ,CA 94062

Stephanie Choi-Freeman, Menlo Park ,CA 94025

Judy Webster, Redwood City ,CA 94061

Lauren Byrne, Redwood City ,CA 94061

Keisha Thoene, Redwood City ,CA 94061

Janice Byrns, Redwood City ,CA 94061

Cindy Merritt, Redwood City ,CA 94061

Patty Doody, Redwood City ,CA 94061

Patti Fletcher, Redwood City ,CA 94061

Gail Ragains, Redwood City ,CA 94061

Sarah Kemper, Redwood City ,CA 94061

Cheryl L Perman, Redwood City ,CA 94061

Yolanda Rosado, Redwood City ,CA 94061

Toni Summers, Redwood City ,CA 94061

Stacy Emory, Redwood City ,CA 94061

Meena Tahiliani, Redwood City ,CA 94061

Michelle Discher, Redwood City ,CA 94061

Marcia Granucci, Redwood City ,CA 94062

Rebecca La Londe, Redwood City ,CA 94062

Mary McGlynn, Redwood City ,CA 94062

Patricia Kracht, Redwood City ,CA 94062

Katharine Edwards, Redwood City ,CA 94062

Pat Martinez, Redwood City ,CA 94062

Linda Bunt, Redwood City ,CA 94062

Margaret Tracy, Redwood City ,CA 94062

Wendy Tawaratsumida, Redwood City ,CA 94062

Catherine Moyer, Redwood City ,CA 94062

Josefina Ayarza, Redwood City ,CA 94062

Jennifer Overby, Redwood City ,CA 94062

Lynn Egan, Redwood City ,CA 94062

Amanda Trice, Redwood City ,CA 94062

Anna Sheikh, Redwood City ,CA 94062

Kathleen Bakshi, Redwood City ,CA 94062

Heather Kinser, Redwood City ,CA 94062

Kimberly Wiefeling, Redwood City ,CA 94062

Mary Campbell, Redwood City ,CA 94062

Catherine Taylor, Redwood City ,CA 94062

Gloria Maldonado, Redwood City ,CA 94062

Alene Kremer, Redwood City ,CA 94062

Betsey Taft, Redwood City ,CA 94062

Jacqueline Rogers, Redwood City ,CA 94062

Lori Beasley, Redwood City ,CA 94062

Heather Sutherland, Redwood City ,CA 94062

Judith Sullivan, Redwood City ,CA 94062

Shelly Hayes, Redwood City ,CA 94062

Sue Mitchell, Redwood City ,CA 94062

Deborah Henken, Redwood City ,CA 94062

Kathryn Morrison, Redwood City ,CA 94062

Marsha Lee Berkman, Redwood City ,CA 94062

Maryann Gonzales, Redwood City ,CA 94062

Margie Austin, Emerald Hills ,CA 94062

Laurie Nusser, Redwood City ,CA 94062

Cheryl Powell, Redwood City ,CA 94062

Camille Johnson, Redwood City ,CA 94062

Sandra Lyon, Emerald Hills ,CA 94062

Diane Leeds, Emerald Hills ,CA 94062

Ruth Gurney, Menlo Park ,CA 94025

Patricia Baile, Menlo Park ,CA 94025

Lisa Conrad, Menlo Park ,CA 94025

Donatella Rossignoli, Menlo Park ,CA 94025

Gabrielle Castro, Menlo Park ,CA 94025

Shirley Singh, Atherton ,CA 94027

Steven Zelinger, Menlo Park ,CA 94025

Gabby Rubio, Menlo Park ,CA 94025

Brandon Bodor, Menlo Park ,CA 94025

Katherine HaffnerZoccatelli, Menlo Park ,CA 94025

Jennifer Squires, Menlo Park ,CA 94025

Jameson Wiltermood, Menlo Park ,CA 94025

Juan Jimenez, Menlo Park ,CA 94025

Nirl London, Menlo Park ,CA 94025

Tad Egami, Menlo Park ,CA 94025

Ruta Gadgil, Menlo Park ,CA 94025

Hana Jenks, Menlo Park ,CA 94025

Mondonna Kennedy, Menlo Park ,CA 94025

Daniel Kim, Menlo Park ,CA 94025

Carter Berg, Menlo Park ,CA 94025

Cody Taylor, Menlo Park ,CA 94025

Eden Ye, Menlo Park ,CA 94025

Jeff Myers, Menlo Park ,CA 94025

Alinne Ortiz, Menlo Park ,CA 94025

Kevin Eklund, Menlo Park ,CA 94025

Tracey Rauen, Menlo Park ,CA 94025

Craig Bawmen, Menlo Park ,CA 94025

Jennifer Denker, Menlo Park ,CA 94025

Brian Smaalders, Menlo Park ,CA 94025

Keiran Thompson, Menlo Park ,CA 94025

Steve Furney-Howe, Menlo Park ,CA 94025

Shahriar Kianersi, Menlo Park ,CA 94025

Hamza Derbas, Menlo Park ,CA 94025

Jackson Bryman, Menlo Park ,CA 94025

Cameron Clark, Menlo Park ,CA 94025

Ann Bilodeau, Menlo Park ,CA 94025

Eric Roth, Menlo Park ,CA 94025

Andrew Churukian, Menlo Park ,CA 94025

Val Parafina, Menlo Park ,CA 94025

Madeline Jhawar, Menlo Park ,CA 94025

Phil Robinson, Menlo Park ,CA 94025

Alejandro Neou-Curiel, Menlo Park ,CA 94025

Rob Campodonico, Menlo Park ,CA 94025

Woojin Cho, Palo Alto ,CA 94303

Laurie Jarrett, Palo Alto ,CA 94303

Tamsin Stewart, Palo Alto ,CA 94303

Julia Rubinov, Palo Alto ,CA 94303

Sharon Prentice, Palo Alto ,CA 94303

Wheilin Hwang, Palo Alto ,CA 94303

Tomas Diaz-Wahl, Palo Alto ,CA 94303

Grandison Gardner, Redwood City ,CA 94062

Jean Forstner, Redwood City ,CA 94062

Anonymous Donor, Redwood City ,CA 94062

Kelly Walkerfisher, Redwood City ,CA 94062

M Zahid, Redwood City ,CA 94062

Marvan Taghvaie, Redwood City ,CA 94062

Jesus Rodriguez, Redwood City ,CA 94061

John Jennings, Redwood City ,CA 94061

Linda Kruger, Redwood City ,CA 94061

Tambi Harwood, Redwood City ,CA 94061

Dana De Nault, Redwood City ,CA 94062

Michael Johnson, Redwood City ,CA 94062

Chris Kehr, Redwood City ,CA 94062

Pat McGuire, Redwood City ,CA 94062

Isila Oliver, Redwood City ,CA 94062

Dale Olds, Redwood City ,CA 94062

Assembly District 23

Mark Hoffberg, Palo Alto ,CA 94303

Kirsten Essenmacher, Palo Alto ,CA 94303

Alexander Cannara, Menlo Park ,CA 94025

James Benjamin, Half Moon Bay ,CA 94019

Eric Vanestic, Half Moon Bay ,CA 94019

Dennis Paull, Half Moon Bay ,CA 94019

Rob Lockhart, Half Moon Bay ,CA 94019

Philip Barnett, Half Moon Bay ,CA 94019

Jerrold Buck, Half Moon Bay ,CA 94019

Stewart Sterling, Half Moon Bay ,CA 94019

John Raithel, Half Moon Bay ,CA 94019

Antonio Ramirez, Half Moon Bay ,CA 94019

John Szabo, Half Moon Bay ,CA 94019

Scott Holmes, Half Moon Bay ,CA 94019

Nicholas Bruno, Half Moon Bay ,CA 94019

Richard Hernandez, Half Moon Bay ,CA 94019

Richard Moore, Half Moon Bay ,CA 94019

Tim Riley, Half Moon Bay ,CA 94019
Thomas Goodson, Half Moon Bay ,CA 94019

Charlie Hodgins, Half Moon Bay ,CA 94019

Robert Mueller, Menlo Park ,CA 94025
Monte Hoskins, Menlo Park ,CA 94025
Ken Fuson, Menlo Park ,CA 94025
Mahmood Sulieman, Menlo Park ,CA 94025

Thomas Jaramillo, Menlo Park ,CA 94025

Steve Foug, Menlo Park ,CA 94025
Dan Diederich, Menlo Park ,CA 94025
Terence Kenney, Menlo Park ,CA 94025
David Korn, Menlo Park ,CA 94025
Bill Greer, Menlo Park ,CA 94025
Jim Tufts, Menlo Park ,CA 94025
Ed Luck, Menlo Park ,CA 94025
Michael Svihura, Menlo Park ,CA 94025
Robert Hall, Menlo Park ,CA 94025
Christopher Sharp, Menlo Park ,CA 94025

Douglas Kaufman, Menlo Park ,CA 94025

Julian Cortella, Menlo Park ,CA 94025
Peter Kim, Menlo Park ,CA 94025
Robert Caletti, Menlo Park ,CA 94025
Sally Finkle, Menlo Park ,CA 94025
John Morris, Menlo Park ,CA 94025
Kevin Moore, Menlo Park ,CA 94025
Steve DeLaet, Menlo Park ,CA 94025
David Rubin, Menlo Park ,CA 94025
Joe Adelson, Menlo Park ,CA 94025
Powell Pocsi, Menlo Park ,CA 94025
Tyler Jackson, Menlo Park ,CA 94025
Mark Reott, Menlo Park ,CA 94025
Mark Doherty, Menlo Park ,CA 94025
David Pellone, Menlo Park ,CA 94025
Daniel Wegener, Menlo Park ,CA 94025
Evan Collins, Atherton ,CA 94027
Michel Streuli, Atherton ,CA 94027
George Wu, Atherton ,CA 94027
Herbert Schneider, Atherton ,CA 94027
Steve Hayes, Atherton ,CA 94027
Leonard Jackie, Atherton ,CA 94027
Gavin Wright, Palo Alto ,CA 94303
Lee Berg, Palo Alto ,CA 94303

Michael Hendershot, Palo Alto ,CA 94303

James Anderson, Palo Alto ,CA 94303

Joel Brown, Palo Alto ,CA 94303

William Queen, Palo Alto ,CA 94303

Victor Rising, Palo Alto ,CA 94303

Chris Ammen, Palo Alto ,CA 94303

Peter Underhill, Palo Alto ,CA 94303

Jon Stone, Palo Alto ,CA 94303

Andrei Sarna-Wojcicki, Palo Alto ,CA 94303

Richard Winden, Palo Alto ,CA 94303

Skip Shapiro, Palo Alto ,CA 94303

Peter Robinson, Palo Alto ,CA 94306

Paul Gibson, Palo Alto ,CA 94306

Art McGarr, Palo Alto ,CA 94306

Jonathan Loeb, Palo Alto ,CA 94306

Singh Keshaw, Palo Alto ,CA 94306

Rob Schlub, Palo Alto ,CA 94306

Ronald Kaplan, Palo Alto ,CA 94306

Christopher Tong, Menlo Park ,CA 94025

Darren Raymond-Lombardo, Menlo Park ,CA 94025

Eric Bunje, Menlo Park ,CA 94025

Clifford Brunk, Menlo Park ,CA 94025

Kellen Glinder, Menlo Park ,CA 94025

Gene McDaniel, Menlo Park ,CA 94025

Jon Hazard, Menlo Park ,CA 94025

Dan Rodarte, Menlo Park ,CA 94025

Donald Shockey, Menlo Park ,CA 94025

George Cole, Menlo Park ,CA 94025

Jeffrey Garrett, Menlo Park ,CA 94025

Narada Hess, Menlo Park ,CA 94025

John Donald, Menlo Park ,CA 94025

Brian Cioffi, Menlo Park ,CA 94025

Chris Martin, Menlo Park ,CA 94025

Jim Pagee, Menlo Park ,CA 94025

Sidney Miller, Palo Alto ,CA 94301

George Herman, Palo Alto ,CA 94301

David Pirie, Palo Alto ,CA 94301

Stephen Sherman, Palo Alto ,CA 94301

Michael Campbell, Palo Alto ,CA 94301

Tyler Hoffman, Palo Alto ,CA 94301

Alan Polish, Palo Alto ,CA 94301

Hal Rucker, Palo Alto ,CA 94301

Mark Ostrau, Palo Alto ,CA 94301

Dennis Boyle, Palo Alto ,CA 94301

Robert Fisher, Palo Alto ,CA 94303
Charles Hoke, Palo Alto ,CA 94303
Byron Brown, Palo Alto ,CA 94303
Peter Noone, Palo Alto ,CA 94303
James Holmlund, Palo Alto ,CA 94303
Jon De Feo, Palo Alto ,CA 94303
Barry Gleeson, Palo Alto ,CA 94303
Abramson Tzuia, Palo Alto ,CA 94303
David Chen, Palo Alto ,CA 94303
Michael Grossmam, Palo Alto ,CA 94303

Dieter Jundt, Palo Alto ,CA 94303
Michael Torgersen, Palo Alto ,CA 94303
John Dukovic, Palo Alto ,CA 94303
Jonathan Ward, Palo Alto ,CA 94303
Volker Schellenberger, Palo Alto ,CA 94303

Kwame Adwere-Boamah, Palo Alto ,CA 94303

Rex Grignon, Palo Alto ,CA 94303
Peter Capak, Mountain View ,CA 94040
Elaine Anderson, Mountain View ,CA 94040

Molly Carlson, Mountain View ,CA 94040

Zale Mitchner, Mountain View ,CA 94040

Steven Olsen, Mountain View ,CA 94040

Lester Su, Mountain View ,CA 94040
Charles Cump, Mountain View ,CA 94040

Martin Griss, Mountain View ,CA 94040
Pat Wright, Mt. View ,CA 94040
Charles Zissman, Mountain View ,CA 94040

David Lehoty, Mountain View ,CA 94040
Steve Chessin, Mountain View ,CA 94040

Jeff Mulligan, Mountain View ,CA 94040
Benjamin Hollin, Mountain View ,CA 94040

Matthew Wheeler, Mountain View ,CA 94040

Douglas Starr, Mountain View ,CA 94040

Allen Atwood, Mountain View ,CA 94040
Edward Stinson, Redwood City ,CA 94061

Stephan Sochoux, Redwood City ,CA 94061

Peter HEadland, Redwood City ,CA 94061

Terry Langeman, Redwood City ,CA 94061

Hugh McLaughlin, Mountain View ,CA 94040

Robert Buschini, Menlo Park ,CA 94025

Stephanie Anderson, Palo Alto ,CA 94301

Haiyan Chen, Palo Alto ,CA 94303

Anne Contreras, Palo Alto ,CA 94303

Mary Lou Meeks, Palo Alto ,CA 94303

Lisa Jewett, Half Moon Bay ,CA 94019

Wendy Lama, Half Moon Bay ,CA 94019

Bonnie Thielemann, Menlo Park ,CA 94025

Kathleen Balestra, Atherton ,CA 94027

Art McGarr, Palo Alto ,CA 94306

Janet Bernadicou, Menlo Park ,CA 94025

Sabine Lenz, Palo Alto ,CA 94301

Kathleen Alley, Mountain View ,CA 94040

Anne Blakeley, Mountain View ,CA 94040

Moir Turner, Mountain View ,CA 94040

Donna Monferdini, Mountain View ,CA 94040

Denise Shine, Mountain View ,CA 94040

Catherine Helgeson, Mountain View ,CA 94040

Gail Prager, Mountain View ,CA 94040

Margaret Suozzo, Mountain View ,CA 94040

Fara Brock, Mountain View ,CA 94040

Patricia Gilbert, Mountain View ,CA 94040

Pearly Varghese, Mountain View ,CA 94040

Marla Denning, Mountain View ,CA 94040

Stephanie Channing, Mountain View ,CA 94040

Patricia Parfett, Mountain View ,CA 94040

Shirley Luna, Mountain View ,CA 94040

Monica Rogers, Mountain View ,CA 94040

Dianne Mar, Mountain View ,CA 94040

Karen O'Brien, Mountain View ,CA 94040

Joanne Donovan, Mountain View ,CA 94040

Darlene Plamondon, Mountain View ,CA 94040

Susan Arnold, Mountain View ,CA 94040

Kathleen Murcheck, Mountain View ,CA 94040

Cindy Kelly, Mountain View ,CA 94040

Janis Carey, Mountain View ,CA 94040

Janice La Duke, Mountain View ,CA 94040

Ann Baker, Redwood City ,CA 94061

Sandra Langeman, Redwood City ,CA 94061

Bridget Madigan, Redwood City ,CA 94061

Kanna Garcia, Redwood City ,CA 94061

Jane Creighton, Redwood City ,CA 94061

Laurel Dawson, Redwood City ,CA 94062

Cara Rudolf, Palo Alto ,CA 94301

Kiara Kramer, Palo Alto ,CA 94301

Mary Nemerov, Palo Alto ,CA 94301

Susan Farrell, Palo Alto ,CA 94301

Patricia Harrell, Palo Alto ,CA 94301

Mike Karen, Palo Alto ,CA 94301

Ruth Letts, Palo Alto ,CA 94301

Susan Nolan, Palo Alto ,CA 94301

Allison Chao, Palo Alto ,CA 94301

Peggy Boyle, Palo Alto ,CA 94301

Anne Rerolle, Palo Alto ,CA 94303

Sheela Narayanaswami, Palo Alto ,CA 94303

Maxene Choi, Palo Alto ,CA 94303

Yvette Cooper, Palo Alto ,CA 94303

Cathy Berwaldt, Palo Alto ,CA 94303

Kathleen Mc Connell, Palo Alto ,CA 94303

Lea Eisen Nilsson, Palo Alto ,CA 94303

Catherine Christen, Palo Alto ,CA 94303

Charmaine Furman, Palo Alto ,CA 94303

Lori Sitrin, Palo Alto ,CA 94303

Barbara Bogner, Palo Alto ,CA 94303

Eugina Merken, Palo Alto ,CA 94303

Rudolph Jaklitsch, Palo Alto ,CA 94303

Joanne Carey, Palo Alto ,CA 94303

Ingrid Totic, Palo Alto ,CA 94303

Natalie Docktor, Palo Alto ,CA 94303

Doree Tschudy, Palo Alto ,CA 94303

Margaret Myers, Palo Alto ,CA 94303

Marsha Blauwkamp, Palo Alto ,CA 94303

Edith Jacobi, Palo Alto ,CA 94303

Nancy Atkinson, Palo Alto ,CA 94303
Judy Lee-Squire, Palo Alto ,CA 94303
Helene Demoulin, Palo Alto ,CA 94303
Caroline Peres, Palo Alto ,CA 94303
Susie Poon, Palo Alto ,CA 94303
Midori Hosobuchi, Palo Alto ,CA 94303
Marcia Hopwood, Palo Alto ,CA 94303
Jeanne Schaefer, Palo Alto ,CA 94303
Leslie Fish, Palo Alto ,CA 94306
Patricia Wipfler, Palo Alto ,CA 94306
Amelia Tung, Palo Alto ,CA 94306
Victoria Smith, Palo Alto ,CA 94306
Jane Marshburn, Palo Alto ,CA 94306
Susan Luttner, Palo Alto ,CA 94306
Emi Sullivan, Palo Alto ,CA 94306
Diane Baldwin, Palo Alto ,CA 94306
Miriam Pagee, Menlo Park ,CA 94025
Michele Wheeler, Menlo Park ,CA 94025

Beth St John, Menlo Park ,CA 94025
Frances Reneau, Menlo Park ,CA 94025

Greta Kim, Menlo Park ,CA 94025
Michelle DeWolf, Menlo Park ,CA 94025

Yvonne Murray, Menlo Park ,CA 94025
Marilyn Tinsley, Menlo Park ,CA 94025
Anne Holmes, Menlo Park ,CA 94025
Ellen Amand, Menlo Park ,CA 94025
Susan Austin, Menlo Park ,CA 94025
Laurel Fullerton, Menlo Park ,CA 94025
Connie Cook, Menlo Park ,CA 94025
Kathleen Marek, Menlo Park ,CA 94025
Adelaide Roberts, Menlo Park ,CA 94025

Jill Amstutz, Menlo Park ,CA 94025
Carol Pechler, Menlo Park ,CA 94025
Ana Pedreiro, Menlo Park ,CA 94025
Jonried Davila, Menlo Park ,CA 94025
Laura Lane, Menlo Park ,CA 94025
Nancy Hedley, Menlo Park ,CA 94025
Jen Block, Menlo Park ,CA 94025
Britte Cheng, Menlo Park ,CA 94025
Catherine Keeler, Menlo Park ,CA 94025

Karen Kitayama, Menlo Park ,CA 94025
Tonya Bliss, Menlo Park ,CA 94025
Judith Rino, Menlo Park ,CA 94025
Maricela Valencia, Menlo Park ,CA 94025

Christie Giacomozzi, Menlo Park ,CA 94025

Mary Ann Gianocca, Half Moon Bay ,CA 94019

Kristina Johnson, Menlo Park ,CA 94025

Stephanie Izzarelli, Half Moon Bay ,CA 94019

Alice Valentine, Menlo Park ,CA 94025

Susan Jones, Half Moon Bay ,CA 94019

Haley Kovacs, Menlo Park ,CA 94025

Lisa Claybaugh, Half Moon Bay ,CA 94019

Trish Ballard, Menlo Park ,CA 94025

Janet Jarvis, Half Moon Bay ,CA 94019

Jennifer Yu, Menlo Park ,CA 94025

Elaine Parker, Half Moon Bay ,CA 94019

Anna Gerbaux, Menlo Park ,CA 94025

Vicky Mitchell, Half Moon Bay ,CA 94019

Jody Buckley, Menlo Park ,CA 94025

Georgann Dudash, Half Moon Bay ,CA 94019

Simonne Greene, Menlo Park ,CA 94025

Jessica Velazquez, Half Moon Bay ,CA 94019

Naomi Baer, Menlo Park ,CA 94025

Christine Evans, Menlo Park ,CA 94025

Jacqueline Ching, Half Moon Bay ,CA 94019

Rachel Tasch, Menlo Park ,CA 94025

Tracey Ireland, Menlo Park ,CA 94025

Juliet Bolding, Half Moon Bay ,CA 94019

Andrea Mallick, Menlo Park ,CA 94025

Susan Lacoste, Menlo Park ,CA 94025

Louise Scholan, Half Moon Bay ,CA 94019

Carol Mince, Menlo Park ,CA 94025

Johanna Mayer, Half Moon Bay ,CA 94019

Sarah Conlon, Menlo Park ,CA 94025

Michele McNellis, Atherton ,CA 94027

Martha Drendell, Half Moon Bay ,CA 94019

Cori Bates, Atherton ,CA 94027

Chris Miller, Half Moon Bay ,CA 94019

Naomi Reynolds, Atherton ,CA 94027

Sue Thomas, Atherton ,CA 94027

Concepsion Cardenas, Half Moon Bay ,CA 94019

Susan Stevick, Atherton ,CA 94027

Colin Williams, Half Moon Bay ,CA 94019

Margo Witt, Half Moon Bay ,CA 94019

Sarah Quosig, Half Moon Bay ,CA 94019

William McCluney, Half Moon Bay ,CA 94019

Pete Martin, Half Moon Bay ,CA 94019

Debra Costa, Half Moon Bay ,CA 94019

Vivienne Demma-Duvall, Half Moon Bay ,CA 94019

Joseph Pizziconi, Half Moon Bay ,CA 94019

Whitney Thwaite, Menlo Park ,CA 94025

Esther Estey, Menlo Park ,CA 94025

Aizaz Ali, Menlo Park ,CA 94025

Ariel Reich, Menlo Park ,CA 94025

Robin Ames, Menlo Park ,CA 94025

Azalea Mitch, Menlo Park ,CA 94025

Page Loeser, Menlo Park ,CA 94025

Tracy Stewart, Menlo Park ,CA 94025

Susan Prohaska, Menlo Park ,CA 94025

Jan Penagos, Menlo Park ,CA 94025

Saya Jenks, Menlo Park ,CA 94025

Rumi Shoda, Menlo Park ,CA 94025

Gregory Diamos, Menlo Park ,CA 94025

Lacramioara Bintu, Menlo Park ,CA 94025

Jaime Gonzalez Jr, Menlo Park ,CA 94025

Vikram Singh, Atherton ,CA 94027

Glista Guilford, Palo Alto ,CA 94301

Steven Bisset, Palo Alto ,CA 94301

Anonymous Donor, Palo Alto ,CA 94301

Yue Shi, Palo Alto ,CA 94301

Christian Carter, Palo Alto ,CA 94301

Robin Parker Meredith, Palo Alto ,CA 94301

Tom Chen, Palo Alto ,CA 94301

Sandy Peters, Palo Alto ,CA 94301

Elizabeth Ronn, Palo Alto ,CA 94301

Joe Lo, Palo Alto ,CA 94301

Satyadev Patel, Palo Alto ,CA 94303

Liping Xia, Palo Alto ,CA 94303

Lolly Osborne, Palo Alto ,CA 94303

Andrew Richmond, Palo Alto ,CA 94303

Merken Euginia, Palo Alto ,CA 94303

Deepak Lala, Palo Alto ,CA 94303

Nadezhda Derugin, Palo Alto ,CA 94303

Leigh Klotz, Palo Alto ,CA 94303

Jean Kirsch, Palo Alto ,CA 94303

M Arunasalam, Palo Alto ,CA 94303

Basab Pradhan, Palo Alto ,CA 94303

Fernda Suriani, Palo Alto ,CA 94303

Christine Kanazawa, Palo Alto ,CA 94303

Chetan Patwardhan, Palo Alto ,CA 94303

Celso Frazao, Palo Alto ,CA 94303

Portia Barrientos, Palo Alto ,CA 94303

Zhong Chen, Palo Alto ,CA 94303

Anonymous Donor, Palo Alto ,CA 94303

Yan Zhang, Palo Alto ,CA 94303

Nathan Alloy, Palo Alto ,CA 94306

Lucy Gu, Palo Alto ,CA 94306

Michael Devine, Palo Alto ,CA 94306

Joe Saccio, Palo Alto ,CA 94306

Kossie Antonova, Palo Alto ,CA 94306

Ronak Patel, Palo Alto ,CA 94306

Deborah McCarley, Palo Alto ,CA 94306

Smita Shah, Palo Alto ,CA 94306

Chris Childress, Redwood City ,CA 94062

Marc Beban, Redwood City ,CA 94062

Carrie Johnson, Redwood City ,CA 94062

Chris Bradford, Mountain View ,CA 94040

Sumeet Jain, Mountain View ,CA 94040

Pat Cochran, Mountain View ,CA 94040

Fan Ye, Mountain View ,CA 94040

Ben Longcorn, Mountain View ,CA 94040

Kelly Shimababukuro, Mountain View ,CA 94040

Frank Bowers, Mountain View ,CA 94040

Pat Stone, Mountain View ,CA 94040

James Apffel, Mountain View ,CA 94040

Kim Evans, Mountain View ,CA 94040

Cregg Cowan, Mountain View ,CA 94040

Kavita Aiyar, Mountain View ,CA 94040

Shuntong Zhu, Mountain View ,CA 94040

Michal Skliba, Mountain View ,CA 94040

Teressa Ellison, Mountain View ,CA 94040

Cary Watson, Mountain View ,CA 94040

Larry Hu, Mountain View ,CA 94040

Anonymous Donor, Redwood City ,CA 94061

Deb Henken, Redwood City ,CA 94062

Amanda Trice, Redwood City ,CA 94062

Doug McIntyre, Redwood City ,CA 94062

Clare Marie Maloney, San Jose ,CA 95126

Assembly District 25

Ryan Radjabi, San Jose ,CA 95125

Pam Williams, San Jose ,CA 95125

Maureen Spitz, San Jose ,CA 95125

Liz Leigh, San Jose ,CA 95125

Bryan Olivar, San Jose ,CA 95125

Kevin Thur, San Jose ,CA 95125

Hannah Bishop, San Jose ,CA 95125

Indu Singh, San Jose ,CA 95125

Linda Longpria, San Jose ,CA 95125

Justin Huerta, San Jose ,CA 95125

John Schwartz, San Jose ,CA 95125

Stephanie Kirkbride, San Jose ,CA 95125

Kate Sbrega, San Jose ,CA 95125

Giovanni Ruiz Santos, San Jose ,CA 95125

Eleni Hopkins, San Jose ,CA 95125

Assembly District 26

Michael Scandizzo, Sunnyvale ,CA 94087

Jessica Salam, Sunnyvale ,CA 94087

Michael Serrone, Sunnyvale ,CA 94087

Paul Cole, Sunnyvale ,CA 94087

Nathan Gardner, Sunnyvale ,CA 94087

Lance Cuenca, Sunnyvale ,CA 94087

Roy Smith, Sunnyvale ,CA 94087

Eric Hughes, Sunnyvale ,CA 94087

Stu Warnsman, Sunnyvale ,CA 94087

Kevin Looney, Sunnyvale ,CA 94087

Greg Leuenberger, Sunnyvale ,CA 94087

Rob Ward, Sunnyvale ,CA 94087

Jeff Pickles, Sunnyvale ,CA 94087

Richard Brookner, Sunnyvale ,CA 94087

Woody Lorman, Sunnyvale ,CA 94087

Ed Fong, Sunnyvale ,CA 94087
Eric Hegblom, Sunnyvale ,CA 94087
Bill Chin, Sunnyvale ,CA 94087
Andrew Ballantyne, San Jose ,CA 95125

Richard Feldman, Cupertino ,CA 95014
Anand Gangadharan, Cupertino ,CA 95014

Brian Vanoli, Cupertino ,CA 95014
Snehashish Sarkar, Cupertino ,CA 95014

Tom Fitzwater, Cupertino ,CA 95014
Alan Taniguchi, Cupertino ,CA 95014
Greg Richmond, Cupertino ,CA 95014
Peter Heyman, Cupertino ,CA 95014
Alex Logan, San Jose ,CA 95125
Charles Cramer, Santa Clara ,CA 95050
Eric Siqueiros, Santa Clara ,CA 95050
Mushtaq Syed, Santa Clara ,CA 95050
Carole Nuttall, Sunnyvale ,CA 94087
Janet Carney, Santa Clara ,CA 95050
Sharon Navone, Santa Clara ,CA 95050
Lynn Hayes, Santa Clara ,CA 95050
Lana Hysinger, Cupertino ,CA 95014
Krishna Prakash, Cupertino ,CA 95014

Edna Amezcua, Cupertino ,CA 95014
Kathy Kwan, Cupertino ,CA 95014
Margie Kensit, San Jose ,CA 95125
Sally Stallard, San Jose ,CA 95125
Carol Marks, Sunnyvale ,CA 94087
Sharon Visini, Sunnyvale ,CA 94087
Alissa Chackerian, Sunnyvale ,CA 94087

Shari Caudle, Sunnyvale ,CA 94087
Anita Herrmann, Sunnyvale ,CA 94087
Alice Schwegman, Sunnyvale ,CA 94087

Michelle Lange, Sunnyvale ,CA 94087
Robin Florentine, Sunnyvale ,CA 94087
Lisa Harmon, Sunnyvale ,CA 94087
Nicole Broadwell, Sunnyvale ,CA 94087
Lenore Cohen, Sunnyvale ,CA 94087
Donna Dillard, Sunnyvale ,CA 94087
Melani Ott, Sunnyvale ,CA 94087
Wendy Lyn, Sunnyvale ,CA 94087
Pamela Caywood, Sunnyvale ,CA 94087

Renuka Singaraju, Sunnyvale ,CA 94087

Fabiane Maluchnik, Sunnyvale ,CA 94087

Barada Mishra, Sunnyvale ,CA 94087

Shaoling Li, Sunnyvale ,CA 94087

Chinh Nguyen, Sunnyvale ,CA 94087

Anonymous Donor, Sunnyvale ,CA 94087

Geralynn Myrah, Sunnyvale ,CA 94087

David Ecsery, Sunnyvale ,CA 94087

Meghana Deodhar, Sunnyvale ,CA 94087

Kaiehu Kaahaaina, Cupertino ,CA 95014

Jason Lewis, Cupertino ,CA 95014

Seb Wong, Cupertino ,CA 95014

Sumeet Arora, Cupertino ,CA 95014

Sara Loesch-Frenk, Cupertino ,CA 95014

Brian Vanoli, Cupertino ,CA 95014

Nathan Leon, Cupertino ,CA 95014

Kiran Rao, Cupertino ,CA 95014

Lynn Bonicelli, Cupertino ,CA 95014

Rongcheng Lin, Cupertino ,CA 95014

Siddharth Gadkari, Cupertino ,CA 95014

Anonymous Donor, Cupertino ,CA 95014

Jenny Quinonez, Sunnyvale ,CA 94089

Vivek Tiwari, Santa Clara ,CA 95050

Armando Amigon, Santa Clara ,CA 95050

Vanessa Jimenez, Santa Clara ,CA 95050

Italica Tapia, Santa Clara ,CA 95050

Allison Daugherty, Santa Clara ,CA 95050

Assembly District 28

Ben Cortez, Los Gatos ,CA 95032

Robert Martines, Los Gatos ,CA 95032

David Hesselberg, Santa Cruz ,CA 95062

Sam Burkhardt, Santa Cruz ,CA 95062

Eugene Madison, Santa Cruz ,CA 95062

Michael Lasky, Santa Cruz ,CA 95062

Jonathan Casper, Santa Cruz ,CA 95062

Dan Casagrande, Santa Cruz ,CA 95062

Sarah Renfro, Santa Cruz ,CA 95062

John Urgo, Santa Cruz ,CA 95062

John Heinke, Santa Cruz ,CA 95062

Xavier Ballard, Santa Cruz ,CA 95062

Diane Smith, Santa Cruz ,CA 95062

Pete Gustafson, Santa Cruz ,CA 95062
Carl Grave, Santa Cruz ,CA 95062
Bruce Schumm, Santa Cruz ,CA 95062
David Harrington, Santa Cruz ,CA 95062

Douglas Mahone, Santa Cruz ,CA 95062

David Ross, Santa Cruz ,CA 95062
Robert Salazar, Santa Cruz ,CA 95062
Robert Sudden, Santa Cruz ,CA 95062
Brad Burkhart, Santa Cruz ,CA 95062
Michael Caspe, Santa Cruz ,CA 95062
Craig Owens, Santa Cruz ,CA 95062
Tyler Locey, Santa Cruz ,CA 95062
Douglas Miller, Santa Cruz ,CA 95062
Peter Kline, Santa Cruz ,CA 95062
Dan Phillips, Santa Cruz ,CA 95062
Ken Miller, Santa Cruz ,CA 95062
Doug Brouwer, Santa Cruz ,CA 95062
Nicholas Walker, Santa Cruz ,CA 95062
Sheryl Loomis, Santa Cruz ,CA 95062
Tyler Newell, Santa Cruz ,CA 95062
Andy Schloss, Santa Cruz ,CA 95062
Kevin Macaulay, Santa Cruz ,CA 95062

Jonathan Adler, Santa Cruz ,CA 95062
Ed Morse, Santa Cruz ,CA 95062
Will Ziliacos, Santa Cruz ,CA 95062
John Greene, Santa Cruz ,CA 95062
Gerald Christensen, Santa Cruz ,CA 95062

William Walton, Santa Cruz ,CA 95062
Chandler Cuzick, Santa Cruz ,CA 95062
James Dinsmore, Santa Cruz ,CA 95062

Robert Thornton, Santa Cruz ,CA 95062
Steve Whitelaw, Santa Cruz ,CA 95062
Walt Wadlow, Santa Cruz ,CA 95062
Michael Herbert, Santa Cruz ,CA 95062
Kenneth & Marilyn Koll, Santa Cruz ,CA 95062

Jeff Hall, Santa Cruz ,CA 95062
Terry Teitelbaum, Santa Cruz ,CA 95062
Christopher Le Maistre, Santa Cruz ,CA 95060

Sebastian Dante, Santa Cruz ,CA 95060
Greg Meyer, Santa Cruz ,CA 95060
Jim Barrios, Santa Cruz ,CA 95060
Eli Silver, Santa Cruz ,CA 95060
David Rodgers, Santa Cruz ,CA 95060

Peter Ellis, Santa Cruz ,CA 95060
Richard Guadian, Santa Cruz ,CA 95060

Julian Sunn, Santa Cruz ,CA 95060
Eric Schmidt, Santa Cruz ,CA 95060
Paul Gendreau, Santa Cruz ,CA 95060
Demetrios Douros, Santa Cruz ,CA 95060

Bill Holmes, Santa Cruz ,CA 95060
Richard Guinnane, Santa Cruz ,CA 95060

George Reynolds, Santa Cruz ,CA 95060

Jackie Allen, Santa Cruz ,CA 95060
Eric Palkovacs, Santa Cruz ,CA 95060
Zack Sanborn, Santa Cruz ,CA 95060
Roger Chaffin, Santa Cruz ,CA 95060
Brian Bochel, Santa Cruz ,CA 95060
Kjell Nilsen, Santa Cruz ,CA 95060
Peter Klotz-Chamberlin, Santa Cruz ,CA 95060

Rylan Freshour, Santa Cruz ,CA 95060
Bob Semas, Santa Cruz ,CA 95060
Trent Knebel, Santa Cruz ,CA 95060
Arnold Garza, Santa Cruz ,CA 95060

Eric Thorne, Santa Cruz ,CA 95060
Jim Debarrios, Santa Cruz ,CA 95060
Frank Andrews, Santa Cruz ,CA 95060
John French, Santa Cruz ,CA 95060
Ben Gregg, Santa Cruz ,CA 95060
Jamie Doppelt, Santa Cruz ,CA 95060
Domenico Anatrone, Santa Cruz ,CA 95060

Samuel Lopez, Santa Cruz ,CA 95060
Richard Roullard, Santa Cruz ,CA 95060

David Kitchen, Santa Cruz ,CA 95062
Michel Gomez, San Jose ,CA 95125
Paul Pratico, San Jose ,CA 95125
James Lemasters, San Jose ,CA 95125
David Marshall, San Jose ,CA 95125
Keith Laver, San Jose ,CA 95125
Warren Hein, San Jose ,CA 95125
Kent Pelz, San Jose ,CA 95125
Dennis La Barbera, San Jose ,CA 95125

Mark Hapner, San Jose ,CA 95125
James Murray, San Jose ,CA 95125
Duane Miyoshi, San Jose ,CA 95125
John Kennedy, Ben Lomond ,CA 95005

David Valentine, Ben Lomond ,CA 95005

Lloyd Smith, Ben Lomond ,CA 95005

D Joseph Overby, Ben Lomond ,CA 95005

Eric Shell, Ben Lomond ,CA 95005

Patrick Kidd, Ben Lomond ,CA 95005

Ted Lodge, Ben Lomond ,CA 95005

Rodney Jensen, Ben Lomond ,CA 95005

Lance Howard, Ben Lomond ,CA 95005

Jon Regan, San Jose ,CA 95125

Fred Murphy, San Jose ,CA 95125

Howard Nelson, San Jose ,CA 95125

John Martin, San Jose ,CA 95125

Robert Bauman, San Jose ,CA 95125

Tim Murray, San Jose ,CA 95125

Bruce Lindsey, San Jose ,CA 95125

Jeff Norment, San Jose ,CA 95125

Gino Sartor, San Jose ,CA 95125

Ted Kremenek, San Jose ,CA 95125

Daniel Dait, San Jose ,CA 95125

Mike Maslaney, San Jose ,CA 95125

Ernest Cockrell, San Jose ,CA 95125

Tom Simon, San Jose ,CA 95125

Tim Thompson, San Jose ,CA 95125

Karl Laucher, San Jose ,CA 95125

Stephen Zee, San Jose ,CA 95125

Andrew Jones, San Jose ,CA 95125

Gordon Stevens, San Jose ,CA 95125

Charles Baldwin, Los Gatos ,CA 95032

Jens Roever, Los Gatos ,CA 95032

Anthony Bidmead, Los Gatos ,CA 95032

Daniel Hendry, Los Gatos ,CA 95032

Tom Johnson, Los Gatos ,CA 95032

Kevin Antonelli, Los Gatos ,CA 95032

Richard Gunsalus, Los Gatos ,CA 95032

Scott Gardner, Los Gatos ,CA 95032

Lester Soss, Los Gatos ,CA 95032

Kevin Luehrte, Los Gatos ,CA 95032

Daniel Culbert, Los Gatos ,CA 95032

Dennis Fredeicks, Los Gatos ,CA 95032

Anand Ramadurai, Los Gatos ,CA 95032

Ian Esche, Los Gatos ,CA 95032

John Rowell, Los Gatos ,CA 95032

Edmund Carbone, Los Gatos ,CA 95032

Neil Creger, Los Gatos ,CA 95032

Jeff Takeuchi, Los Gatos ,CA 95032
Robert Galvan, Los Gatos ,CA 95032
Jason Veitch, Santa Cruz ,CA 95065
Thomas Ehrlich, Santa Cruz ,CA 95065
Roy Espinoza, Santa Cruz ,CA 95065
Michael King, Santa Cruz ,CA 95065
Jeff Matlock, Santa Cruz ,CA 95065
David Ezroj, Santa Cruz ,CA 95065
Thomas Silverman, Santa Cruz ,CA 95065

Calvin Smith, Santa Cruz ,CA 95065
Pranav Anand, Santa Cruz ,CA 95065
David Pais, Santa Cruz ,CA 95065
Matt Bortolin, Santa Cruz ,CA 95065
Michael Pruger, Santa Cruz ,CA 95065
Thomas Reisz, Santa Cruz ,CA 95065
Shahn Spratt, Felton ,CA 95018
Cyril Smith, Felton ,CA 95018
Michael Kauert, Felton ,CA 95018
Robert Riley, Felton ,CA 95018
Bill Brune, Felton ,CA 95018
Eric Long, Felton ,CA 95018
Peter Haddad, Felton ,CA 95018
Sidney Mygatt, Los Gatos ,CA 95030

Homer Leonard, Los Gatos ,CA 95030
Mark Hassin, Los Gatos ,CA 95030
Joseph Teague, Los Gatos ,CA 95030
Susan Spencer, Felton ,CA 95018
Cynthia Hinogosa-Alvarado, San Jose ,CA 95125
Mary Bushman, Ben Lomond ,CA 95005
Heather Pham, San Jose ,CA 95125
Karen Ford, San Jose ,CA 95125
Jessica Blitchok, San Jose ,CA 95125
Sandra Eidam, Los Gatos ,CA 95032
Frances Edwards, Los Gatos ,CA 95032
Catherine Voss Plaxton, Los Gatos ,CA 95032

Annemone Barnett, Los Gatos ,CA 95032

Terry Waters, Santa Cruz ,CA 95062
Bonnie Olson, Santa Cruz ,CA 95062
Jolene Kemos, Santa Cruz ,CA 95062
Marlene Pitkow, Santa Cruz ,CA 95062
Deanne Lange, Santa Cruz ,CA 95062
Delys Loxas, Santa Cruz ,CA 95062
Marian Malatesta, Santa Cruz ,CA 95062

Diana Magor, Santa Cruz ,CA 95060

Shannon Halbleb, Santa Cruz ,CA 95060

Duffy Grant, Santa Cruz ,CA 95060

Marsha Shanle, Santa Cruz ,CA 95060

Dee Schabot, Santa Cruz ,CA 95060

Rose Odland, Felton ,CA 95018

Jessica Merring, Felton ,CA 95018

Sarah Sevilla, Felton ,CA 95018

Agatha Kenar, Felton ,CA 95018

Tami Tracey, Felton ,CA 95018

Cathy Lemeschewsky, Felton ,CA 95018

Kate Stoelting, Felton ,CA 95018

Kathryn Bolle, Felton ,CA 95018

Cheryl Anderson, Felton ,CA 95018

Polly Clifford, Los Gatos ,CA 95030

Joan Laird, Los Gatos ,CA 95030

Aimee Mcneilly, Los Gatos ,CA 95030

Linda Lowney, Los Gatos ,CA 95030

Yolanda Augustino, Los Gatos ,CA 95030

Emily Feather, Los Gatos ,CA 95030

Nancy Martin, Los Gatos ,CA 95030

Cheryl Hasha, Los Gatos ,CA 95030

Regina Araujo, Los Gatos ,CA 95030

Darcia Eding, Los Gatos ,CA 95030

Robin McCool, Santa Cruz ,CA 95065

Eloise Graham, Santa Cruz ,CA 95065

Cheryl Mayes, Santa Cruz ,CA 95065

Karen Cochran, Santa Cruz ,CA 95065

Cathy Curtis, Santa Cruz ,CA 95065

Therese Kilpatrick, Santa Cruz ,CA 95065

Maryanne Lange, Santa Cruz ,CA 95065

Kelly Gibson, Santa Cruz ,CA 95065

Diana Ireland, Santa Cruz ,CA 95065

Heidi Morgan, Santa Cruz ,CA 95065

Kirsten Affolder, Santa Cruz ,CA 95065

Stephanie Lieggi, Santa Cruz ,CA 95065

Mary Lou Nicoletti, Santa Cruz ,CA 95065

Kathleen Willey, Los Gatos ,CA 95032

Christina Selfridge, Los Gatos ,CA 95032

Meghan Williams, Los Gatos ,CA 95032

Claire Linstrom, Los Gatos ,CA 95032

Louise Deak, Los Gatos ,CA 95032

Ashley Coffeng, Los Gatos ,CA 95032

Arlene Mitchell, Los Gatos ,CA 95032
Judy Levin, Los Gatos ,CA 95032
Christa Cormier, Los Gatos ,CA 95032
Kathleen Donofrio, Los Gatos ,CA 95032

Sue Takaichi, Los Gatos ,CA 95032
Susan Crane, Los Gatos ,CA 95032
April Kern, Los Gatos ,CA 95032
Jeanne Driedger, Los Gatos ,CA 95032
Judith Hembrough, Los Gatos ,CA 95032

Michelle Yannoni, Los Gatos ,CA 95032
Kami Pham, Los Gatos ,CA 95032
Debra Creger, Los Gatos ,CA 95032
Elena Ortiz, Los Gatos ,CA 95032
Altie Ginn, Los Gatos ,CA 95032
Naomi Salowe, Los Gatos ,CA 95032
Christine Cipriano, Los Gatos ,CA 95032

Claudia Coffey, Los Gatos ,CA 95032
Amber Walker, Ben Lomond ,CA 95005
Katharine Hoppis, Ben Lomond ,CA 95005

Tamara Swain, Ben Lomond ,CA 95005
Sharon Rose, Ben Lomond ,CA 95005

Jo Kenny, Ben Lomond ,CA 95005
Adrienne Erwin, Ben Lomond ,CA 95005

Nadia Czarnota, Ben Lomond ,CA 95005

Elizabeth Abrams, Ben Lomond ,CA 95005

Meg McCrea, San Jose ,CA 95125
Jennifer Peckham, San Jose ,CA 95125
Sheri Hunt, San Jose ,CA 95125
Margaret Johansen, San Jose ,CA 95125

Teresa Galarza, San Jose ,CA 95125
Deborah Carney, San Jose ,CA 95125
Mary Jeffries, San Jose ,CA 95125
Jennifer Herrera, San Jose ,CA 95125
Ana Leal, San Jose ,CA 95125
Autumn Glisson, San Jose ,CA 95125
Jeanne McKinney, San Jose ,CA 95125
Julie Butterfield, San Jose ,CA 95125
Jennifer Jennings, San Jose ,CA 95125
Michelle McCarthy, San Jose ,CA 95125
Judith Schierling, San Jose ,CA 95125
Diana Bishop, San Jose ,CA 95125
Marcia Rezza, San Jose ,CA 95125

Cathryn Buran, San Jose ,CA 95125

Lisa Tripp, San Jose ,CA 95125

Alisa Busche, San Jose ,CA 95125

Nora Lemmon, San Jose ,CA 95125

Rose MacDonald, San Jose ,CA 95125

Carole Murphy, San Jose ,CA 95125

Amy Hibbs, San Jose ,CA 95125

Dena Trujillo, San Jose ,CA 95125

Monet Thomson, San Jose ,CA 95125

Kathleen Burroughs, San Jose ,CA 95125

Nancy Parkinson, San Jose ,CA 95125

Denise Giacomini, San Jose ,CA 95125

Mike and Katie Schaaf, San Jose ,CA 95125

Katherine Doi, San Jose ,CA 95125

Cathy Niemiller, San Jose ,CA 95125

Flora Koch, San Jose ,CA 95125

Heather Kent, San Jose ,CA 95125

Dean Samara-Rubio, San Jose ,CA 95125

Elizabeth Robbins, San Jose ,CA 95125

Judith Hutchins, San Jose ,CA 95125

Laura Petrizzo, San Jose ,CA 95125

Cindy Lauasuncion, San Jose ,CA 95125

Maria Casareto-Chapman, San Jose ,CA 95125

Kathleen Pimentel, San Jose ,CA 95125

Joanne Saiu, San Jose ,CA 95125

Noelle Dunn, San Jose ,CA 95125

Terri Carter, San Jose ,CA 95125

Alisa Pura, San Jose ,CA 95125

Mary Gardner, San Jose ,CA 95125

Barbara Coffman, San Jose ,CA 95125

Kara Mandujano, San Jose ,CA 95125

Mary Smith, Santa Cruz ,CA 95060

Carole Kampfe, Santa Cruz ,CA 95060

Elaine Kihara, Santa Cruz ,CA 95060

Jill Susskind, Santa Cruz ,CA 95060

Carolyn Sue Dumller, Santa Cruz ,CA 95060

Sabrina Dalbesio, Santa Cruz ,CA 95060

Kristine Hoover, Santa Cruz ,CA 95060

Anne Takahashi-Kelso, Santa Cruz ,CA 95060

Meri Ancic, Santa Cruz ,CA 95060

Krista Lazier, Santa Cruz ,CA 95060

Patty Walters, Santa Cruz ,CA 95060

Linda Holiday, Santa Cruz ,CA 95060
Joyce Banzhaf, Santa Cruz ,CA 95060
Julia Ragen, Santa Cruz ,CA 95060
Stephanie Navarrette, Santa Cruz ,CA 95060

Velia Pena, Santa Cruz ,CA 95060
Sonya Newlyn, Santa Cruz ,CA 95060
Julia Davenport, Santa Cruz ,CA 95060
Cecilia Shin, Santa Cruz ,CA 95060
Patty Mccord, Santa Cruz ,CA 95060
Rina Weingold, Santa Cruz ,CA 95060
Celeste Baross, Santa Cruz ,CA 95060
Janna Hoadley, Santa Cruz ,CA 95060
Mary Tobisch, Santa Cruz ,CA 95060
Nancy Manning, Santa Cruz ,CA 95060
Jean Andrews, Santa Cruz ,CA 95060
Lisa Rose, Santa Cruz ,CA 95060
Silvia Lopez, Santa Cruz ,CA 95060
Deborah Gale, Santa Cruz ,CA 95060
Caitlin McGovern, Santa Cruz ,CA 95060

Elizabeth Mandranis, Santa Cruz ,CA 95060

Cindy Jarrold, Santa Cruz ,CA 95060
Gail Doering, Santa Cruz ,CA 95060

Phyllis Rosenblum, Santa Cruz ,CA 95060

Lynn Curtin, Santa Cruz ,CA 95060
Valerie Murphy, Santa Cruz ,CA 95060
Sarah Breeden, Santa Cruz ,CA 95060
Catherine Carlstroem, Santa Cruz ,CA 95060

Elizabeth Dasher, Santa Cruz ,CA 95060

Maia Kamehiro, Santa Cruz ,CA 95060
Barbara Laurence, Santa Cruz ,CA 95060

Jeanna Penn, Santa Cruz ,CA 95060
Diane Lynn Pallante, Santa Cruz ,CA 95060

Andrea Damon, Santa Cruz ,CA 95060
Nicole Dubus, Santa Cruz ,CA 95060
Michelle Moore, Santa Cruz ,CA 95060
Sarah Ray, Brooks ,CA 95060
Kathy Blackwood, Santa Cruz ,CA 95060

Kathy Chaput, Santa Cruz ,CA 95062
Felicity Rosencranz, Santa Cruz, Ca ,CA 95062
Kathleen Mcburney, Santa Cruz ,CA 95062
Marie Forst, Santa Cruz ,CA 95062

Danielle Schmidt, Santa Cruz ,CA 95062

Julie Shattuck, Santa Cruz ,CA 95062

Brenda Pegram Twohig, Santa Cruz ,CA 95062

Joan Saia, Santa Cruz ,CA 95062

Kimberly Ruth, Santa Cruz ,CA 95062

Caitlin Phillips, Santa Cruz ,CA 95062

Susan Moren, Santa Cruz ,CA 95062

Linda Stinger, Santa Cruz ,CA 95062

Anne Criss, Santa Cruz ,CA 95062

Rae Tobey, Santa Cruz ,CA 95062

Charolette Liest-williams, Santa Cruz ,CA 95062

Sylvia Skefich, Santa Cruz ,CA 95062

Silka Jewell, Santa Cruz ,CA 95062

Bonnie Benham, Santa Cruz ,CA 95062

Rick Larsen, Santa Cruz ,CA 95062

Nancy Buell, Santa Cruz ,CA 95062

Katie Huckaby, Santa Cruz ,CA 95062

Jane Drascroll, Santa Cruz ,CA 95062

Catherine Mooney, Santa Cruz ,CA 95062

Manjula Stokes, Santa Cruz ,CA 95062

Denise Holbert, Santa Cruz ,CA 95062

Melody Culver, Santa Cruz ,CA 95062

Zoe Curcio, Santa Cruz ,CA 95062

Emma Kelsey, Santa Cruz ,CA 95062

Lorie Goudie, Santa Cruz ,CA 95062

Allison Alden, Santa Cruz ,CA 95062

Doris Crytzer, Santa Cruz ,CA 95062

Martha Tiedeman, Santa Cruz ,CA 95062

Lorraine Fukuda, Santa Cruz ,CA 95062

Diana Lopes, Santa Cruz ,CA 95062

Lindsay Dye, Santa Cruz ,CA 95062

Lisa Berkowitz, Santa Cruz ,CA 95062

Lisa Ford, Santa Cruz ,CA 95062

Frances Gomez, Santa Cruz ,CA 95062

Helen Resneck-Sannes, Santa Cruz ,CA 95062

Patricia Williams, Santa Cruz ,CA 95062

Lori Furlano, Santa Cruz ,CA 95062

Lynne Achterberg, Santa Cruz ,CA 95062

Fabiola Grimaldo, Santa Cruz ,CA 95062

Martha Whitham, Santa Cruz ,CA 95062

Marianne Franks, Santa Cruz ,CA 95062

Victoria Rallojay, Santa Cruz ,CA 95062
Patricia Zylins, Santa Cruz ,CA 95062
Anna Bedingfeld, Santa Cruz ,CA 95062
Jerri Tupper, Santa Cruz ,CA 95062
Sarah Renfro, Santa Cruz ,CA 95062
Candice Clarke, Santa Cruz ,CA 95062
Carrie Smith, Santa Cruz ,CA 95062
Mikako Lazarus, Santa Cruz ,CA 95062
Helen Fey, Santa Cruz ,CA 95062
Anna Abend, Santa Cruz ,CA 95062
Cathryn Kaufman, Santa Cruz ,CA 95062

Molly McMahon, Santa Cruz ,CA 95062
Eva Leuthold, Santa Cruz ,CA 95062
Victoria Macintyre, Santa Cruz ,CA 95062

Ann Meyer, Santa Cruz ,CA 95062
Lea Scarpelli, Santa Cruz ,CA 95062
Ethel Herring, Santa Cruz ,CA 95062
Bonnie Black, Santa Cruz ,CA 95062
Margarita Hernandez, Santa Cruz ,CA 95062

Amy Savoni, Santa Cruz ,CA 95062
Laura Gaughan, Santa Cruz ,CA 95062
Paula Gibson, Santa Cruz ,CA 95062

Betsey Scheiner, Santa Cruz ,CA 95062
Marcie Hancock, Santa Cruz ,CA 95062
Carol Patterson, Santa Cruz ,CA 95062
Juliette Bentolila, Santa Cruz ,CA 95062
Angelica Salazar, Santa Cruz ,CA 95062

Irene Ruiz, Santa Cruz ,CA 95062
Katrin Musch, Santa Cruz ,CA 95062
Kathy Donovan, Santa Cruz ,CA 95062
Carolyn Dille, Santa Cruz ,CA 95062
Emma Attard, Santa Cruz ,CA 95062
Veronica Zaleha, Santa Cruz ,CA 95062

Tay Lotte, Santa Cruz ,CA 95062
Anita Joshi, Santa Cruz ,CA 95062
Julie Broder, Santa Cruz ,CA 95062
Lando Aldis, Santa Cruz ,CA 95062
Dan Jackness, Santa Cruz ,CA 95062
Majorie Rothman, Santa Cruz ,CA 95062

Tom Haverstock, Santa Cruz ,CA 95062
Tessa Gilbert, Santa Cruz ,CA 95062
Philip Samuels, Santa Cruz ,CA 95062
Julian Granados, Santa Cruz ,CA 95062
Kathy Calvert, Santa Cruz ,CA 95062

Emilio Rubalcaba, Santa Cruz ,CA 95062

Eva Rose, Santa Cruz ,CA 95062

John Smyrl, Santa Cruz ,CA 95062

Chris Kim, Santa Cruz ,CA 95062

Chris Clarke, Santa Cruz ,CA 95062

Anna Tucci, Santa Cruz ,CA 95062

Lio Lomez, Santa Cruz ,CA 95062

Frank McCue, Santa Cruz ,CA 95062

Sunny Black Calf, Santa Cruz ,CA 95062

Brenda Ehla, Santa Cruz ,CA 95062

Megann Marten, Santa Cruz ,CA 95062

Elena Boussaroque, Santa Cruz ,CA 95062

Lacey Kane, Santa Cruz ,CA 95062

Juliana Craig, Santa Cruz ,CA 95062

Autumn Kobayashi, Santa Cruz ,CA 95062

Beatriz Tijero, Santa Cruz ,CA 95062

Ednaarely Cruz, Santa Cruz ,CA 95062

Faye Jahnigen, Santa Cruz ,CA 95062

Michael Behan, Santa Cruz ,CA 95062

Matthew Stevens, Santa Cruz ,CA 95062

Francie Newfield, Santa Cruz ,CA 95062

Georgia Ramos, Santa Cruz ,CA 95062

Megan Stettner, Santa Cruz ,CA 95062

Lani Faulkner, Santa Cruz ,CA 95062

Ruben Retana, Santa Cruz ,CA 95062

Vicky Jones, Santa Cruz ,CA 95062

Lauren Browner, Santa Cruz ,CA 95062

Ava Adamsen, Santa Cruz ,CA 95062

Sarah Woods, Santa Cruz ,CA 95062

Cerridwyn McLaglen, Santa Cruz ,CA 95062

Tamasin Middour, Santa Cruz ,CA 95062

Eleanor Markarian, Santa Cruz ,CA 95062

Samuel Kay, Santa Cruz ,CA 95062

Stacy Brown, Santa Cruz ,CA 95062

Holly Hoeksema, Santa Cruz ,CA 95062

Davis Harms, Santa Cruz ,CA 95062

Barbara Mike, Santa Cruz ,CA 95062

Daniel Borland, Santa Cruz ,CA 95062

Vanessa Weber, Santa Cruz ,CA 95062

Bill Schiltz, Santa Cruz ,CA 95060

Anonymous Donor, Santa Cruz ,CA 95060

Samuel Adhanom, Santa Cruz ,CA 95060

Anna Goss, Santa Cruz ,CA 95062

Steve Wiles, Santa Cruz ,CA 95062

Canvass Lead, Santa Cruz ,CA 95062

Robin Moore, Santa Cruz ,CA 95062

Robert Vandegrift, Santa Cruz ,CA 95062

Kaya Johnson, Santa Cruz ,CA 95062

Luke Dewyer, Santa Cruz ,CA 95062

Cathryn Davidson, Santa Cruz ,CA 95062

Joshua Showalter, Santa Cruz ,CA 95062

Brenda Weybright, Santa Cruz ,CA 95062

Sara Sagui Henson, Santa Cruz ,CA 95062

Spencer Montgomery, Santa Cruz ,CA 95062

Stacy Philpott, Santa Cruz ,CA 95062

Peter Ottersbach, Santa Cruz ,CA 95062

Jesse Davis, Santa Cruz ,CA 95062

Ariela Turzo, Santa Cruz ,CA 95062

Rosamond Mark, Santa Cruz ,CA 95062

Anthony Ford, Santa Cruz ,CA 95062

James Durbin, Santa Cruz ,CA 95060

Robin Imlay, Santa Cruz ,CA 95060

Paul Corbae, Santa Cruz ,CA 95060

Robin Garcia, Santa Cruz ,CA 95060

Robin Murphy, Santa Cruz ,CA 95060

Sue Della Santina, Santa Cruz ,CA 95060

Vanessa Ojekeire, Santa Cruz ,CA 95060

Claire Madesen, Santa Cruz ,CA 95060

Savan Yaseen, Santa Cruz ,CA 95060

Sarah McKnight, Santa Cruz ,CA 95060

Brian Smith, Santa Cruz ,CA 95060

Kurt Kawahara, Santa Cruz ,CA 95060

Werner Leung, Santa Cruz ,CA 95060

Colby Stevens, Santa Cruz ,CA 95060

Christian Martin, Santa Cruz ,CA 95060

Susan Springfield, Santa Cruz ,CA 95060

Anonymous Donor, Santa Cruz ,CA 95060

Alex Ponik, Santa Cruz ,CA 95060

Shaylah Ward, Santa Cruz ,CA 95060

Rose Hasty, Santa Cruz ,CA 95060

Leticia Becerra, Santa Cruz ,CA 95062
Isabella Mendez, Santa Cruz ,CA 95062
Ben Grove, Santa Cruz ,CA 95062
Pat Burns, Santa Cruz ,CA 95062
Demetrie Tyler, Santa Cruz ,CA 95062
Bahar Hanjani, Santa Cruz ,CA 95062
Canvass Lead, Santa Cruz ,CA 95062
Juan Pablo, Santa Cruz ,CA 95062
Namaya Cervelli, Santa Cruz ,CA 95062
Katie Ferraro, Santa Cruz ,CA 95062
Adam Gazal, Santa Cruz ,CA 95062
Derrick Ridpath, Santa Cruz ,CA 95062
Ethan Jeffery-Liu, Santa Cruz ,CA 95060

Lj Gagnier, Santa Cruz ,CA 95060
Aaron Chu, Santa Cruz ,CA 95060
Ava Gerber, Santa Cruz ,CA 95060
Courtney Perry, Santa Cruz ,CA 95060
Jeffrey Disapalo, Santa Cruz ,CA 95060
James Steinley, Santa Cruz ,CA 95060
Zoe Madvin, Santa Cruz ,CA 95060
Marlin Henton, Santa Cruz ,CA 95060
HarriSON Perri, Santa Cruz ,CA 95060
Braden Begbie, Santa Cruz ,CA 95060

Steve Elb, Santa Cruz ,CA 95060
Hannah Waterhouse, Santa Cruz ,CA 95060

Jenny Brancato, Santa Cruz ,CA 95060
Marcelo Mandler, Santa Cruz ,CA 95060
Matthew Young, Santa Cruz ,CA 95060
Taylor West, Santa Cruz ,CA 95060
Doyle Foreman, Santa Cruz ,CA 95060
Cory Cunningham, Santa Cruz ,CA 95060

Alex Zavaleta, Santa Cruz ,CA 95060
Jennifer Smith, Santa Cruz ,CA 95060
Dawn Silva, Santa Cruz ,CA 95060
Aaron Chu, Santa Cruz ,CA 95060
Mason Traber, Santa Cruz ,CA 95060
Sarah Sabir, Santa Cruz ,CA 95060
Bo Morgan, Santa Cruz ,CA 95060
Ken Koll, Santa Cruz ,CA 95060
Erik Hogness, Santa Cruz ,CA 95060
Max Valdez, Santa Cruz ,CA 95060
Daniel Hildebrand, Santa Cruz ,CA 95060

Marci Mmm, Santa Cruz ,CA 95060
Carol Lezin, Santa Cruz ,CA 95060
Kyle Lewis, Santa Cruz ,CA 95060

Alex Rudzinski, Santa Cruz ,CA 95060
Liam Jones, Santa Cruz ,CA 95060
Robynne Blume, Santa Cruz ,CA 95060
Kerry Skemp, Santa Cruz ,CO 95060
Paul Holden, Ben Lomond ,CA 95005
Kristen VanKlootwyk, Ben Lomond ,CA 95005

Jason Beren, Ben Lomond ,CA 95005
Matthew Cornelison, Ben Lomond ,CA 95005

Jim D'artenay, Ben Lomond ,CA 95005
Karen Lockwood, Ben Lomond ,CA 95005

B Kruse, San Jose ,CA 95125
Robin Feinman, San Jose ,CA 95125
Jonass Lehtinen, San Jose ,CA 95125
Devyn Shum, San Jose ,CA 95125
Cheick Camara, San Jose ,CA 95125
Erikka Santiago, San Jose ,CA 95125
Paraag Vaishampayan, San Jose ,CA 95125

Franceska Huggins, San Jose ,CA 95125

Shannon Mccarthy, San Jose ,CA 95125
Chris Juco, San Jose ,CA 95125

Humair Raza, Los Gatos ,CA 95032
Paul Eksombatchai, Los Gatos ,CA 95032

Bijan Davari, Los Gatos ,CA 95032
Kelly Frangieh, Los Gatos ,CA 95032
Isabelle Athearn, Los Gatos ,CA 95032
Minjung Kim, Los Gatos ,CA 95032
Amy Wagner, Los Gatos ,CA 95032
Joaquin Gonzalez, Los Gatos ,CA 95032

Luke Rutt, Los Gatos ,CA 95032
Maggi McNutt, Los Gatos ,CA 95032
Lisa Graf, Los Gatos ,CA 95032
Siqi Jin, Los Gatos ,CA 95032
Sriram Sundarababu, Los Gatos ,CA 95032

Ying Ji, Los Gatos ,CA 95032
Daniel Nevis, Los Gatos ,CA 95032
Aoife Wilson, Los Gatos ,CA 95032
Michelle A, Los Gatos ,CA 95032
Jorja Silva, Los Gatos ,CA 95032
Liljana Ivanovska, Los Gatos ,CA 95032
Shannon Drotar, Los Gatos ,CA 95032
Ella Carlson, Los Gatos ,CA 95032
Jenny Chai, Los Gatos ,CA 95032

Mara Miljevich, Los Gatos ,CA 95032

Luke Rasmussen, Los Gatos ,CA 95032

Libby Trevathan, Los Gatos ,CA 95032

Tessa Gilbert, Santa Cruz ,CA 95064

Nic Brody, Santa Cruz ,CA 95065

William Hollander, Los Gatos ,CA 95030

Nathan Chen, Los Gatos ,CA 95030

Naysan Emami, Los Gatos ,CA 95030

Daniel Tam, Los Gatos ,CA 95030

Jean Rose, Los Gatos ,CA 95030

Joann Alvis, Los Gatos ,CA 95030

Charles Tuckfield, Los Gatos ,CA 95030

Chelsy Cueva, Los Gatos ,CA 95030

Shahar Noy, Los Gatos ,CA 95030

Alexis Krostun, Felton ,CA 95018

Tangi Chapman, Felton ,CA 95018

W S Shaw, Felton ,CA 95018

Mar Sartain, Felton ,CA 95018

Timothy Hoge, Felton ,CA 95018

Assembly District 29

Dana Mills, Watsonville ,CA 95076

Anthony Carlson, Watsonville ,CA 95076

Victoria Purnell, Watsonville ,CA 95076

Canvass Lead, Freedom ,CA 95019

Assembly District 30

Kim Chavez, Aptos ,CA 95003

Leigh-Anne Fraley, Santa Cruz ,CA 95062

Morgan Tyler, Santa Cruz ,CA 95062

Rob Keener, Santa Cruz ,CA 95062

John Franklin, Santa Cruz ,CA 95062

Tom Starkey, Santa Cruz ,CA 95062

Craig Wooden, Santa Cruz ,CA 95062

Brian Madden, Santa Cruz ,CA 95062

Steven Lienhard, Santa Cruz ,CA 95062

Christopher Huffman, Santa Cruz ,CA 95062

Nick Dawson, Santa Cruz ,CA 95062

Tom Butler, Santa Cruz ,CA 95062

David Young, Santa Cruz ,CA 95062

Brian Forsse, Santa Cruz ,CA 95062

Dylan Haile, Santa Cruz ,CA 95062

Roy Paterson, Santa Cruz ,CA 95062

Scott Myers, Santa Cruz ,CA 95062

Rafael Martinez, Santa Cruz ,CA 95062
Denney Wilburn, Santa Cruz ,CA 95062
Paul Chandley, Santa Cruz ,CA 95062
William Elliot, Santa Cruz ,CA 95062
Michael Santa Cruz, Santa Cruz ,CA 95062

Phillip Gomez, Santa Cruz ,CA 95062
Rock Pfothauer, Santa Cruz ,CA 95062

Tim Hyland, Santa Cruz ,CA 95062
Krina Franco, Santa Cruz ,CA 95062
Joe Trebbien, Santa Cruz ,CA 95062
Mark Holsapple, Santa Cruz ,CA 95062
Mikel Parton, Santa Cruz ,CA 95062
Mark Segal, Santa Cruz ,CA 95062
Peter Reiter, Santa Cruz ,CA 95062
Robert Davis, Santa Cruz ,CA 95062
John Alston, Santa Cruz ,CA 95062
Matt Wolfinger, Santa Cruz ,CA 95062
Andrew Ames, Santa Cruz ,CA 95062
Dan Landry, Santa Cruz ,CA 95062
Lynnelle Wing, Santa Cruz ,CA 95062
Christopher Stubblefield, Santa Cruz ,CA 95062
Eduardo Frota, Santa Cruz ,CA 95062

Dustin Colegrove, Santa Cruz ,CA 95062

Andrew Arneson, Santa Cruz ,CA 95062
Bryce Florian, Santa Cruz ,CA 95062
Manuel Reyes, Santa Cruz ,CA 95062
Nicholas Coleman, Santa Cruz ,CA 95062

George Williams, Santa Cruz ,CA 95062
Joe Pettinger, Santa Cruz ,CA 95062
Eric Bodnar, Santa Cruz ,CA 95062
David Jorgensen, Santa Cruz ,CA 95062

Michael Thomas, Santa Cruz ,CA 95062
Heath Packard, Santa Cruz ,CA 95062
Jerry Martin, Santa Cruz ,CA 95062
Paul Brindel, Santa Cruz ,CA 95062
Gary Gates, Santa Cruz ,CA 95062
Gregor Cailliet, Monterey ,CA 93940
Vince Uycha, Monterey ,CA 93940
Phil Wellman, Monterey ,CA 93940
Gregg Dexter, Monterey ,CA 93940
Robert Gularte, Monterey ,CA 93940
William Lutz, Monterey ,CA 93940
Eddie Sena, Monterey ,CA 93940
Phillip Walter, Monterey ,CA 93940

Roy Head, Monterey ,CA 93940
Andrew Philips, Monterey ,CA 93940
David Sims, Monterey ,CA 93940
Nicolas Nuttall, Monterey ,CA 93940
Randy Henson, Monterey ,CA 93940
Thomas Christensen, Monterey ,CA 93940

Matthew Binder, Monterey ,CA 93940
Robert Stange, Monterey ,CA 93940
Robert Sutcliffe, Monterey ,CA 93940
John Schmidlin, Monterey ,CA 93940
Kevin Eagleson, Monterey ,CA 93940
Matthew Savoca, Monterey ,CA 93940
Matt Topping, Capitola ,CA 95010
Elliott Campbell, Capitola ,CA 95010
William Waldron, Capitola ,CA 95010
David Pope, Capitola ,CA 95010
Bruce Hunter, Capitola ,CA 95010
James Bushneff, Capitola ,CA 95010
Cameron Steele, Capitola ,CA 95010
Bruce Abt, Capitola ,CA 95010
Jay Freiermuth, Capitola ,CA 95010
Jolan Miller, Capitola ,CA 95010
Timothy Martinho, Capitola ,CA 95010

Hans Helmudt, Capitola ,CA 95010
Robert Welsch, Capitola ,CA 95010
Henry Garcia, Capitola ,CA 95010
Doug Williams, Capitola ,CA 95010
Don Campbell, Capitola ,CA 95010
Dennis Norton, Capitola ,CA 95010
Peter Emanuel, Capitola ,CA 95010
Tim Vaughan, Carmel ,CA 93923
Peter Hiller, Carmel ,CA 93923
Alan Movson, Carmel ,CA 93923
Benjamin Mathia, Carmel ,CA 93923
Thomas Trotter, Carmel ,CA 93923
Benjamin Kline, Carmel ,CA 93923
Mike Hendrick, Carmel ,CA 93923
Roger Husted, Carmel ,CA 93923
Barney Scollan, Carmel ,CA 93923
Ross Kroeker, Carmel ,CA 93923
Gordon Snyder, Aptos ,CA 95003
Stephen Matteson, Aptos ,CA 95003
Douglas Spinelli, Aptos ,CA 95003
Kenny Giroward, Aptos ,CA 95003
Michael Salo, Aptos ,CA 95003
Patrick Kelley, Aptos ,CA 95003

Mark Pedersen, Aptos ,CA 95003
Leslie Delorie, Aptos ,CA 95003
Steve Robbins, Aptos ,CA 95003
Richard Johnson, Aptos ,CA 95003
Rodney Peck, Aptos ,CA 95003
Paul Hoffman, Aptos ,CA 95003
Bernard Gannon, Aptos ,CA 95003
Timothy Carl, Aptos ,CA 95003
Calvin Hom, Aptos ,CA 95003
Greg Koenig, Aptos ,CA 95003
Richard Bax, Soquel ,CA 95073
Brian Thayer, Soquel ,CA 95073
Greg Kropf, Watsonville ,CA 95076
Kraig Evans, Santa Cruz ,CA 95065
Stephen Benson, Santa Cruz ,CA 95065
Richard Corbal, Santa Cruz ,CA 95065
Roger Blain, Santa Cruz ,CA 95065
Stewart Jenkins, Santa Cruz ,CA 95065
Aaron Worthy, Santa Cruz ,CA 95065
Nancy Lowe, Soquel ,CA 95073
Scott Inman, San Luis Obispo ,CA 93401
Keneth Anderson, San Luis Obispo ,CA 93401

Ryan Hutchinson, San Luis Obispo ,CA 93401
Troy Spindler, San Luis Obispo ,CA 93401
Len Medel, San Luis Obispo ,CA 93401
Eric Olsen, San Luis Obispo ,CA 93401
James Mc Bride, San Luis Obispo ,CA 93401
Ted Rich, San Luis Obispo ,CA 93401
Douglas Rick, Pacific Grove ,CA 93950
Michael Hagerty, Pacific Grove ,CA 93950
Jamie Silva, Pacific Grove ,CA 93950
Patrick Taylor, Pacific Grove ,CA 93950
David Lindenthal, Pacific Grove ,CA 93950
Peter Bolton, Pacific Grove ,CA 93950
Robert Kershner, Pacific Grove ,CA 93950
Tom Seidman, Pacific Grove ,CA 93950
William Dugger, Pacific Grove ,CA 93950
John Mccraney, Pacific Grove ,CA 93950
Thomas Murray, Pacific Grove ,CA 93950
Hagen Tilp, Pacific Grove ,CA 93950

Malcolm Harris, Pacific Grove ,CA 93950

Fred Jealous, Pacific Grove ,CA 93950

Rob Sherlock, Pacific Grove ,CA 93950

Susan Denny- Krepp, Pacific Grove ,CA 93950

Rudolph Tenenbaum, Pacific Grove ,CA 93950

Sherman Capson, Pacific Grove ,CA 93950

Kenneth Jackson, Pacific Grove ,CA 93950

Robert McCleery, Pacific Grove ,CA 93950

Eric Ulwelling, Pacific Grove ,CA 93950

Jorge Deleon, Pacific Grove ,CA 93950

Paul Flavell, Pacific Grove ,CA 93950

Bruce Upton, Pacific Grove ,CA 93950

James Hall, Pacific Grove ,CA 93950

Chris Arnold, Pacific Grove ,CA 93950

William Lauster, Pacific Grove ,CA 93950

Lucy Moore, Pacific Grove ,CA 93950

Manda Mercurio, Monterey ,CA 93940

Mary Welsh, Monterey ,CA 93940

Bridget Ryan, Monterey ,CA 93940

Tracey Gannon, Aptos ,CA 95003

Athena Wolfe, Aptos ,CA 95003

Diane Emigh, Capitola ,CA 95010

Robin Hubert, Capitola ,CA 95010

Jan McCormac, Capitola ,CA 95010

Betty Dalsemer, Carmel ,CA 93923

Gabi Estill, Aptos ,CA 95003

Christine Roades, Soquel ,CA 95073

Michelle Bradley, Soquel ,CA 95073

Naomi Fine, Santa Cruz ,CA 95062

Cheryl Jackson-Saunders, Santa Cruz ,CA 95062

Christine Crozier, Pacific Grove ,CA 93950

Sylvia Burgman, Pacific Grove ,CA 93950

Lee Bradley, Pacific Grove ,CA 93950

Carmen Scholis, Pacific Grove ,CA 93950

Carol Hart, Pacific Grove ,CA 93950

Mari Suzuki, Pacific Grove ,CA 93950

Kathleen Prew, Pacific Grove ,CA 93950

Terri Kaltenbach, Pacific Grove ,CA 93950

Jessica Smith, Pacific Grove ,CA 93950

Nancy Parsons, Pacific Grove ,CA 93950

Kimberlee Krueger, Pacific Grove ,CA 93950

Kareen Novak, Pacific Grove ,CA 93950

Susan Krepp Denny, Pacific Grove ,CA 93950

Adrienne Pimentel, Pacific Grove ,CA 93950

Janet Covell, Pacific Grove ,CA 93950

Kelly San Filippo, Pacific Grove ,CA 93950

Patricia McDowell, Pacific Grove ,CA 93950

Pamela Wade, Pacific Grove ,CA 93950

Donna Abbott, Pacific Grove ,CA 93950

Elena Tsypktn, Pacific Grove ,CA 93950

Rosemary Wells, Pacific Grove ,CA 93950

Jan Scott, Pacific Grove ,CA 93950

Mariana Monge, Pacific Grove ,CA 93950

Christina Mendez, Pacific Grove ,CA 93950

June Malament, Pacific Grove ,CA 93950

Nell Flattery, Pacific Grove ,CA 93950

Deborah Bille, Pacific Grove ,CA 93950

Nan Sherburne, Pacific Grove ,CA 93950

Diane Rheinisch, San Luis Obispo ,CA 93401

Linda Vanasupa, San Luis Obispo ,CA 93401

Mary Kleeman, San Luis Obispo ,CA 93401

Catherine Mannins, Sn Luis Obisp ,CA 93401

Karen Christian, Sn Luis Obisp ,CA 93401

Janine Rands, San Luis Obispo ,CA 93401

Kirsten Davis, San Luis Obispo ,CA 93401

Carol Mortensen, San Luis Obispo ,CA 93401

L Baggett, San Luis Obispo ,CA 93401

Suzanne Cikowski, Sn Luis Obisp ,CA 93401

Maria Hutkin, San Luis Obispo ,CA 93401

Karen Pling, San Luis Obispo ,CA 93401

Julie Endres, San Luis Obispo ,CA 93401

Vailia From, San Luis Obispo ,CA 93401

Paula Carr, San Luis Obispo ,CA 93401

Diana Duque, Santa Cruz ,CA 95065
Kathy Pilant, Santa Cruz ,CA 95065
Myra Taylor, Santa Cruz ,CA 95065
Ruth Wilson, Soquel ,CA 95073
Deborah Swanson, Soquel ,CA 95073
Christy McCain, Soquel ,CA 95073
Terese Mascari, Soquel ,CA 95073
Darrielle Tennenbaum, Soquel ,CA 95073

Adrienne Vilaubi, Soquel ,CA 95073
Kristen Barkman, Soquel ,CA 95073
Denise O'Connor, Soquel ,CA 95073
Linda Fridy, Soquel ,CA 95073
Pauline Zenner, Soquel ,CA 95073
Adelaide Soria, Soquel ,CA 95073
Diana Swisher, Soquel ,CA 95073
Alisa Matteucci, Soquel ,CA 95073
Elizabeth Simms, Soquel ,CA 95073
Lynette Clark, Watsonville ,CA 95076
Barbara Kingsley, Watsonville ,CA 95076

Sonia Ramirez, Carmel ,CA 93923
Kathleen Jackson, Carmel ,CA 93923
Carol Tisson, Carmel ,CA 93923

Ruth Trotter, Carmel ,CA 93923
Natalie Lott, Carmel ,CA 93923
Olga Vorobiov, Carmel ,CA 93923
Mari Wehde, Carmel ,CA 93923
Jeannie Mcpherson, Carmel ,CA 93923
Margaret Wahl, Carmel ,CA 93923
Melanie Trainor, Carmel ,CA 93923
Barbara Steinberg, Carmel ,CA 93923

Nicole Sandperl, Aptos ,CA 95003
Jeanne Lance, Aptos ,CA 95003
Diana Glanville, Aptos ,CA 95003
Andrea Givens, Aptos ,CA 95003
Tina Solinas, Aptos ,CA 95003
Catherine Patton, Aptos ,CA 95003
Raymond Boerema, Aptos ,CA 95003
Victoria Erickson, Aptos ,CA 95003
Eliza Linley, Aptos ,CA 95003
Laura Reichle, Aptos ,CA 95003
Deborah Geesey, Aptos ,CA 95003
Suzanne Jensen, Aptos ,CA 95003
Heather Evans, Aptos ,CA 95003
Catharina Wessels, Aptos ,CA 95003
Eve Ortiz, Aptos ,CA 95003

Kristen Williams, Aptos ,CA 95003
Kathleen Julien, Aptos ,CA 95003
Janet Chaboude, Aptos ,CA 95003
Marcia Martin, Aptos ,CA 95003
Debie Chirco-Macдона, Aptos ,CA 95003

Rosanne Tedesco, Aptos ,CA 95003
Debi Cavin, Aptos ,CA 95003
Rita Slobodian, Aptos ,CA 95003
Malaya Gold, Aptos ,CA 95003
Sue Kaufmann, Capitola ,CA 95010
Laurie Salatich, Capitola ,CA 95010
Elizabeth Schwartz, Capitola ,CA 95010
Maria Kirk, Capitola ,CA 95010
Yvonne Zannis, Capitola ,CA 95010
Cynthia Boram, Capitola ,CA 95010
Karen Smith, Capitola ,CA 95010
Cindy Jo Rose, Capitola ,CA 95010
Esther Sylvan, Capitola ,CA 95010
Marissa Herman, Capitola ,CA 95010
Kristen Riceti, Capitola ,CA 95010
Jo Aribas, Monterey ,CA 93940
Robin Winfield, Monterey ,CA 93940
Sibylla White, Monterey ,CA 93940

Audrey Miller, Monterey ,CA 93940
Melinda Manlin, Monterey ,CA 93940
Jenny Cattanach, Monterey ,CA 93940
Claudia Mchenry, Monterey ,CA 93940
Susan Dodds, Monterey ,CA 93940
Dianne Sloop, Monterey ,CA 93940
Nancy Henderson, Monterey ,CA 93940
Heather James, Monterey ,CA 93940
Juliet Pool, Monterey ,CA 93940
Lisa Wagener, Santa Cruz ,CA 95062
Rachel Gross, Santa Cruz ,CA 95062
Nadine Gregg, Santa Cruz ,CA 95062
Ann Ostermann, Santa Cruz ,CA 95062
Karyn Adams, Santa Cruz ,CA 95062
Marilou James, Santa Cruz ,CA 95062
Jill Soenen, Santa Cruz ,CA 95062
Cindy Davis, Santa Cruz ,CA 95062
Marilyn Diamond, Santa Cruz ,CA 95062

Mary Gunwall, Santa Cruz ,CA 95062
Jennifer Forrest, Santa Cruz ,CA 95062
Gail Davis, Santa Cruz ,CA 95062
Erica Pittman, Santa Cruz ,CA 95062
Tasha Turzo, Santa Cruz ,CA 95062

Margaret Moesch, Santa Cruz ,CA 95062

Rosie King, Santa Cruz ,CA 95062

Patricia Goodfriend, Santa Cruz ,CA 95062

Kristin Smith, Santa Cruz ,CA 95062

Julie Weston Rosen, Santa Cruz ,CA 95062

Dianne Freeman, Santa Cruz ,CA 95062

Sandi B Lynch, Santa Cruz ,CA 95062

Jen Normington, Santa Cruz ,CA 95062

Amanda Hess, Santa Cruz ,CA 95062

Andrea Ruggiero, Santa Cruz ,CA 95062

Lorna Grundeman, Santa Cruz ,CA 95062

Tracey Radek, Santa Cruz ,CA 95062

Irma Vega, Santa Cruz ,CA 95062

Jennifer Carole, Santa Cruz ,CA 95062

Erin Conway, Santa Cruz ,CA 95062

Gail Gomez, Santa Cruz ,CA 95062

Joan Macdonald, Santa Cruz ,CA 95062

Sally Lewis, Santa Cruz ,CA 95062

Adrienne Carter, Santa Cruz ,CA 95062

Marcia Heath, Santa Cruz ,CA 95062

Betjh Mcclintock, Santa Cruz ,CA 95062

Michele Gross, Santa Cruz ,CA 95062

Adrienne Keane, Santa Cruz ,CA 95062

Tisha Jones, Santa Cruz ,CA 95062

Lisa Beaudreau, Santa Cruz ,CA 95062

Sina Miri, Santa Cruz ,CA 95062

Donna Bonnel, Santa Cruz ,CA 95062

Bunny Tupper, Santa Cruz ,CA 95062

Catherine Wolpert, Santa Cruz ,CA 95062

Gina Bartolomei, Santa Cruz ,CA 95062

Barbara Ann Ogle, Santa Cruz ,CA 95062

Paula Mack, Santa Cruz ,CA 95062

Mary Barros, Santa Cruz ,CA 95062

Christopher Moreno, Santa Cruz ,CA 95062

Elizabeth Kunselman, Santa Cruz ,CA 95062

Lisa Lachlan-Hache, Santa Cruz ,CA 95062

Christine Kopecky, Santa Cruz ,CA 95062

Rosemary Kendall, Santa Cruz ,CA 95062

Sandra Pelletier, Santa Cruz ,CA 95062

Karen Hockemeyer, Santa Cruz ,CA 95062

Cynthia Davis, Santa Cruz ,CA 95062

Martha Chubb, Santa Cruz ,CA 95062

Kathleen Jones, Santa Cruz ,CA 95062

Erron Mccuroy, Santa Cruz ,CA 95062

Anonymous Donor, Santa Cruz ,CA 95062

Ana Menera, Santa Cruz ,CA 95062

Ailine Delgado, Santa Cruz ,CA 95062

Dana Rasmussen, Santa Cruz ,CA 95062

Halley Santaella, Santa Cruz ,CA 95062

Kalisa Beagle, Santa Cruz ,CA 95062

Semen Solgan, Santa Cruz ,CA 95062

Anonymous Donor, Santa Cruz ,CA 95062

Mayenne Donkervoort, Santa Cruz ,CA 95062

Eileen Reyes, Santa Cruz ,CA 95062

Conan Knoll, Santa Cruz ,CA 95062

Beth Riley, Santa Cruz ,CA 95062

Casey McDonald, Santa Cruz ,CA 95062

Lynn Dunn, Santa Cruz ,CA 95062

Anonymous Donor, Santa Cruz ,CA 95062

Gayle Jones, Santa Cruz ,CA 95062

Kim Jackson, Santa Cruz ,CA 95062

Caitlin Strauhal, Monterey ,CA 93940

Sue Garcia, Monterey ,CA 93940

Lisa Meyer, Monterey ,CA 93940

Ryen Madsen, Monterey ,CA 93940

Jay Lyall, Monterey ,CA 93940

Glyn Jones, Monterey ,CA 93940

Stephen Stults, Monterey ,CA 93940

Andrew Balakin, Monterey ,CA 93940

Lee Morrow, Monterey ,CA 93940

Heidi Sullivan, Monterey ,CA 93940

Darren Rojas, Monterey ,CA 93940

Larranie A Hennesy, Monterey ,CA 93940

Nathan Villafria, Monterey ,CA 93940

Faye Clark, Monterey ,CA 93940

Caroline Chen, Monterey ,CA 93940

Zoey Bowmen, Monterey ,CA 93940

Katie Schmude, Monterey ,CA 93940

Michelle Calderon, Monterey ,CA 93940

Jan Phillips Paulsen, Monterey ,CA 93940

Sydney Sims, Monterey ,CA 93940
Kim Larner, Monterey ,CA 93940
Coeleen Kiebert, Aptos ,CA 95003
Lauri Collins, Aptos ,CA 95003
Tiffany Nicholas, Aptos ,CA 95003
Edward Campodonico, Capitola ,CA 95010

Steve Provancher, Capitola ,CA 95010
Ruth Saro, Capitola ,CA 95010
Robert Ordery, Capitola ,CA 95010
Ryan Legassick, Capitola ,CA 95010
Dana Melton, Capitola ,CA 95010
Waldon Lewis, Capitola ,CA 95010
Lauren Richelieu, Monterey ,CA 93940
Noel Mills, Carmel ,CA 93923
Srividya Shankar, Carmel ,CA 93923
Leslie Dye, Aptos ,CA 95003
Christian Buse, Santa Cruz ,CA 95065
Katherine McGuire, Santa Cruz ,CA 95065

Alva Romero, Santa Cruz ,CA 95065
Roger Blian, Santa Cruz ,CA 95065
Denis Ruttenberg, Santa Cruz ,CA 95065

David McCormic, Soquel ,CA 95073

Lynda Graciany, Soquel ,CA 95073
Thang Nguyen, Soquel ,CA 95073
Anonymous Donor, Soquel ,CA 95073
Karina Nehrer, Soquel ,CA 95073
Callan Carnenburgh, Soquel ,CA 95073
Kasey Milligan, Soquel ,CA 95073
Barbra Hueber, Soquel ,CA 95073
Zach Dillon, Soquel ,CA 95073
Bernie Gomez, Soquel ,CA 95073
Leighan Novina, Soquel ,CA 95073
Jme W, Soquel ,CA 95073
Jamie Nyland, Soquel ,CA 95073
Lee Loewy, Soquel ,CA 95073
Adam McKeon, Soquel ,CA 95073
Mai Bui, Soquel ,CA 95073
Lynn Bregman, Soquel ,CA 95073
Rendon Holloway, San Luis Obispo ,CA 93401

Chris Stalp, San Luis Obispo ,CA 93401
Courtney Marter, San Luis Obispo ,CA 93401

Jameson Ritchie, San Luis Obispo ,CA 93401

Richard Parsons, Pacific Grove ,CA 93950

Jeff Kehr, Pacific Grove ,CA 93950

Gael Gallagher, Pacific Grove ,CA 93950

Germain Hatcher, Pacific Grove ,CA 93950

Sarah Kaatz, Pacific Grove ,CA 93950

Billie Brown, Pacific Grove ,CA 93950

Jean Engvall, Pacific Grove ,CA 93950

Kim Akeman, Pacific Grove ,CA 93950

Michel Hondagneu, Pacific Grove ,CA 93950

Kent Speed, Pacific Grove ,CA 93950

Mica Van Bommel, Pacific Grove ,CA 93950

Ryan Hubenthal, Pacific Grove ,CA 93950

Leslie Ternullo, Pacific Grove ,CA 93950

Carol Still, Pacific Grove ,CA 93950

Assembly District 37

Kim Kjonggaard, Santa Barbara ,CA 93109

Peter Nissler, Santa Barbara ,CA 93111

M M Eskandari Qajar, Santa Barbara ,CA 93111

Mike Fealy, Santa Barbara ,CA 93111

Christian Guier, Santa Barbara ,CA 93101

Nora Oakes, Santa Barbara ,CA 93105

Lawrence Bickford, Santa Barbara ,CA 93105

Tim Schultz, Santa Barbara ,CA 93110

Jackie Goodman, Santa Barbara ,CA 93101

Isaac Barba, Carpinteria ,CA 93013

Jose Carrillo, Carpinteria ,CA 93013

Ronald Contreras, Carpinteria ,CA 93013

Steven Bradley, Carpinteria ,CA 93013

Mike Connors, Carpinteria ,CA 93013

Luis Hernandez, Carpinteria ,CA 93013

Robert Dautch, Carpinteria ,CA 93013

Gregory Lewis, Carpinteria ,CA 93013

David Crooks, Carpinteria ,CA 93013

Ron Camp, Carpinteria ,CA 93013

Larry Charpid, Carpinteria ,CA 93013

David Springer, Carpinteria ,CA 93013

Raymond Kolbe, Carpinteria ,CA 93013

John Annalle, Carpinteria ,CA 93013

Juan Patino, Carpinteria ,CA 93013

Travis Serpa, Carpinteria ,CA 93013

Barry Sanchez, Santa Barbara ,CA 93105

Robert Wright, Santa Barbara ,CA 93105

Michael Sjollem, Santa Barbara ,CA 93105

David Giannini, Santa Barbara ,CA 93105

Marlan Mitchell, Santa Barbara ,CA 93105

Stephen Jones, Santa Barbara ,CA 93105

Jack Murray, Santa Barbara ,CA 93105

Ryan Drake, Santa Barbara ,CA 93105

Gunther Newhouse, Santa Barbara ,CA 93105

Gil Hoeflich, Santa Barbara ,CA 93105

Paul Tonkin, Santa Barbara ,CA 93105

Richard Dunlap, Santa Barbara ,CA 93105

Patricia Chapman, Santa Barbara ,CA 93105

Jim Tamborello, Santa Barbara ,CA 93105

Sayre MacNeil, Santa Barbara ,CA 93105

Ken Beisser, Santa Barbara ,CA 93105

Jim St John, Santa Barbara ,CA 93105

Donald Canley, Santa Barbara ,CA 93105

Andrew Robins, Santa Barbara ,CA 93105

Eric Lee, Santa Barbara ,CA 93105

Jim Wimmer, Santa Barbara ,CA 93105

Maraka Macdonald, Santa Barbara ,CA 93105

James Langhorne, Santa Barbara ,CA 93105

Gary Kurth, Santa Barbara ,CA 93105

Matt Keenan, Santa Barbara ,CA 93105

Nathan Walker, Santa Barbara ,CA 93105

Rich Untermann, Santa Barbara ,CA 93105

Magne Land, Santa Barbara ,CA 93105

Wolf Kittler, Santa Barbara ,CA 93105

Joe Chenoweth, Santa Barbara ,CA 93105

John Ummel, Santa Barbara ,CA 93105

Evan Moore, Santa Barbara ,CA 93105

Jason Sunukjian, Santa Barbara ,CA 93105

John Dannenbaum, Santa Barbara ,CA 93105

Adam Kanold, Santa Barbara ,CA 93105

Matthew Pettit, Santa Barbara ,CA 93105

Robert Sowers, Santa Barbara ,CA 93105

Daniel Angel, Santa Barbara ,CA 93105

Samuel Pellicori, Santa Barbara ,CA 93105

Jon Reese, Santa Barbara ,CA 93105

John Alexander, Santa Barbara ,CA 93105

Kirk Grier, Santa Barbara ,CA 93105

Richard Browman, Santa Barbara ,CA 93105

Greg Brown, Santa Barbara ,CA 93105

Jack Camiel, Santa Barbara ,CA 93105

Tyler Custodio, Santa Barbara ,CA 93105

Brian Harwell, Santa Barbara ,CA 93105

Ted Mullen, Santa Barbara ,CA 93105

Mark Guevarra, Santa Barbara ,CA 93105

Jerry Gibson, Santa Barbara ,CA 93105

Ron Bromwell, Santa Barbara ,CA 93105

Richard Dovgin, Santa Barbara ,CA 93105

Belinda White, Santa Barbara ,CA 93105

John Agapito, Santa Barbara ,CA 93105

Curtis Wilcox, Santa Barbara ,CA 93105

John Willis, Santa Barbara ,CA 93105

Peter Conn, Santa Barbara ,CA 93105

Zacarias Gonzalez, Santa Barbara ,CA 93105

Edward Lowenschuss, Santa Barbara ,CA 93105

Henry Wildenborg, Santa Barbara ,CA 93105

Andrei Boudreau, Santa Barbara ,CA 93105

John Roshell, Santa Barbara ,CA 93105

Derek Rapp, Santa Barbara ,CA 93105

Alex Tuttle, Santa Barbara ,CA 93105

Paul Atkinson, Santa Barbara ,CA 93105

Jeffrey Harbison, Santa Barbara ,CA 93105

John Hindley, Santa Barbara ,CA 93105

Bill Powell, Santa Barbara ,CA 93105

Gordon Hess, Santa Barbara ,CA 93105

Michael Owens, Santa Barbara ,CA 93105

Tyler Boeddecker, Santa Barbara ,CA 93105

Salvador Munoz, Santa Barbara ,CA 93105

Michael Weidmann, Santa Barbara ,CA 93105

Bruce Covington, Santa Barbara ,CA 93105

Jamie Lugo, Santa Barbara ,CA 93105

Stephan Karczag, Santa Barbara ,CA 93105

Ben Durham, Santa Barbara ,CA 93105

James Thomas, Santa Barbara ,CA 93105

Ken Wilson, Santa Barbara ,CA 93105

Ron Perry, Santa Barbara ,CA 93105

John Benson, Santa Barbara ,CA 93105

Robert Reed, Santa Barbara ,CA 93105

Greg Milligan, Santa Barbara ,CA 93105

Karl Halbach, Santa Barbara ,CA 93105

Andy Young, Santa Barbara ,CA 93101

Albert Garcia, Santa Barbara ,CA 93101

Thomas Trent, Santa Barbara ,CA 93101

Ronald Hillas, Santa Barbara ,CA 93101

Kevin North, Santa Barbara ,CA 93101

Ken Mckaba, Santa Barbara ,CA 93101

Daniel Frank, Santa Barbara ,CA 93101

Christopher Chalk, Santa Barbara ,CA 93101

Vince Mcglinchey, Santa Barbara ,CA 93101

Sean McClure, Santa Barbara ,CA 93101

Marshall Thomas, Santa Barbara ,CA 93101

Teddy Gasser, Santa Barbara ,CA 93101

Ryan Hanni, Santa Barbara ,CA 93101

John Hileman, Santa Barbara ,CA 93101

Grady Williams, Santa Barbara ,CA 93103

Ed Baeza, Santa Barbara ,CA 93103

Greg Lorenz, Santa Barbara ,CA 93103

Eric Cambell, Santa Barbara ,CA 93103

Daniel del Valle, Santa Barbara ,CA 93103

Jim Hill, Santa Barbara ,CA 93103

John Leonard, Santa Barbara ,CA 93103

Shaw Mcfarlan, Santa Barbara ,CA 93103

Benny Bermudez, Santa Barbara ,CA 93103

Ruben Regalado, Santa Barbara ,CA 93103

Valentin Garcia, Santa Barbara ,CA 93103

Sean Federbusch, Santa Barbara ,CA 93103

Darroch Greer, Santa Barbara ,CA 93103

John McKinney, Santa Barbara ,CA 93103

Jim Klingshirn, Santa Barbara ,CA 93103

Jon Andersen, Santa Barbara ,CA 93103

Cory Brabon, Santa Barbara ,CA 93103

John Abraham, Santa Barbara ,CA 93103

Robert Kershaw, Santa Barbara ,CA 93103

Bill Thomas, Santa Barbara ,CA 93101

Ken Yamamoto, Santa Barbara ,CA 93101

Rob Cavaness, Santa Barbara ,CA 93101

Doug McFarling, Santa Barbara ,CA 93101

Alan Irwin, Santa Barbara ,CA 93101

Michael Downey, Santa Barbara ,CA 93101

Doug Hyland, Santa Barbara ,CA 93101

Pablo Jimenez, Santa Barbara ,CA 93101

Mike Lorimer, Santa Barbara ,CA 93103

Royce Adams, Santa Barbara ,CA 93103

Arran Harvey, Santa Barbara ,CA 93103

Charles Barry, Santa Barbara ,CA 93103

Gregory Feitt, Santa Barbara ,CA 93103

Kevin Blewett, Santa Barbara ,CA 93103

Kylie Kershaw, Santa Barbara ,CA 93103

Michael Todd, Santa Barbara ,CA 93103

Rich Moser, Santa Barbara ,CA 93103

Vincent Golson, Santa Barbara ,CA 93103

Thomas Robinson, Santa Barbara ,CA 93103

Collin Mcgrath, Santa Barbara ,CA 93103

Jim Boulter, Santa Barbara ,CA 93103

Tom Moore, Santa Barbara ,CA 93103

Emmanuel Guinto, Santa Barbara ,CA 93103

Jon Dillard, Santa Barbara ,CA 93103

Guillermo Gonzalez, Santa Barbara ,CA 93103

Marvin Luzum, Santa Barbara ,CA 93101

Garnetta Darton, Santa Barbara ,CA 93101

John Leiva, Santa Barbara ,CA 93101

Meredith Sodomka, Santa Barbara ,CA 93101

George Yatchisin, Santa Barbara ,CA 93101

Michael Stulberg, Santa Barbara ,CA 93101

Darrell Marchus, Santa Barbara ,CA 93101

Thomas Harbeson, Santa Barbara ,CA 93101

Anthony Bielein, Santa Barbara ,CA 93101

Don Burress, Santa Barbara ,CA 93101

Jon Lipman, Santa Barbara ,CA 93101

Graham Wesolowski, Santa Barbara ,CA 93101

Randy Vior, Santa Barbara ,CA 93101

Blake Haber, Santa Barbara ,CA 93101

Paul Charleston, Santa Barbara ,CA 93101

Anthony Lopez, Santa Barbara ,CA 93101

Tod Stockwell, Santa Barbara ,CA 93101

Robert Goda, Santa Barbara ,CA 93101

Gustavo Tovar, Santa Barbara ,CA 93101

James Jackson, Santa Barbara ,CA 93101

Matthew Davis, Santa Barbara ,CA 93101

Timothy Cunningham, Santa Barbara ,CA 93101

Harvey Barish, Santa Barbara ,CA 93101

Alan Richter, Santa Barbara ,CA 93101

Mike Mansbach, Santa Barbara ,CA 93101

Philip McKenna, Santa Barbara ,CA 93101

Jeff Speer, Santa Barbara ,CA 93101

Andrew Lester, Santa Barbara ,CA 93101

Josh Rohmer, Santa Barbara ,CA 93101

Lance Mason, Santa Barbara ,CA 93101

Spencer Pardee, Santa Barbara ,CA 93101

Robert Sponsel, Santa Barbara ,CA 93101

Riley Koepsell, Santa Barbara ,CA 93101

Richard Flacks, Santa Barbara ,CA 93101

Michael Gibian, Santa Barbara ,CA 93101

Gregory Freeland, Santa Barbara ,CA 93101

Dave Sulka, Santa Barbara ,CA 93101

David Seubert, Santa Barbara ,CA 93101

Ed Baum, Santa Barbara ,CA 93101

Brian Wainwright, Santa Barbara ,CA 93101

Andrew Gerbac, Santa Barbara ,CA 93101

Mark Drehl, Santa Barbara ,CA 93101

Dave Busso, Santa Barbara ,CA 93101

Howard Winant, Santa Barbara ,CA 93101

David Tennen, Santa Barbara ,CA 93101

Will Hidalgo, Santa Barbara ,CA 93101

Robb Mackay, Santa Barbara ,CA 93101

Xochitl Martinez, Santa Barbara ,CA 93101

Dustin Schnabel, Santa Barbara ,CA 93101

Rowan Diioia, Santa Barbara ,CA 93101

Allan Cooley, Santa Barbara ,CA 93101

Eric Cardenas, Goleta ,CA 93117

Michael Kotowski, Goleta ,CA 93117

Donald Tognazzini, Goleta ,CA 93117

James Thompson, Goleta ,CA 93117

Craig Wines, Goleta ,CA 93117

Frank Meiners, Goleta ,CA 93117

Mark Byrum, Goleta ,CA 93117

Thomas Aguirre, Goleta ,CA 93117

Robert Mccourt, Goleta ,CA 93117

Peter Cohen, Santa Barbara ,CA 93117

Phillip Huffard, Goleta ,CA 93117

Scott Taylor, Goleta ,CA 93117

Rick Olds, Goleta ,CA 93117

Oscar Montalvo, Goleta ,CA 93117

Eric Johnson, Goleta ,CA 93117

Fred Creason, Goleta ,CA 93117

Mark Wohlwen, Goleta ,CA 93117

Frank Smeltz, Goleta ,CA 93117

Michael Bates, Goleta ,CA 93117

Jim Doohan, Goleta ,CA 93117

Rafael Haro, Goleta ,CA 93117

Eric Cantley, Goleta ,CA 93117

Erik Ritzau, Goleta ,CA 93117

Nicholas Kim, Goleta ,CA 93117

Cynthia Struven, Goleta ,CA 93117

Andrew Villavicencio, Goleta ,CA 93117

David Echt, Goleta ,CA 93117

Michael Alvarado, Goleta ,CA 93117

Bob Ewing, Goleta ,CA 93117

Terry Hurt, Goleta ,CA 93117

Andrew Roteman, Goleta ,CA 93117

Ronald Fisk, Goleta ,CA 93117

Duane Sears, Goleta ,CA 93117

Donald Cox, Goleta ,CA 93117

Kevin Schaefer, Goleta ,CA 93117

Raymond Lam, Goleta ,CA 93117

John Robertson, Goleta ,CA 93117

Scott Vestal, Goleta ,CA 93117

Carlos Estrada, Goleta ,CA 93117

Piot Van Der Meulen, Goleta ,CA 93117

Ryan Radujko, Goleta ,CA 93117

Arthur Harris, Goleta ,CA 93117

Edward Gore, Goleta ,CA 93117

Vaughn Bunch, Goleta ,CA 93117

Don Nason, Goleta ,CA 93117

John Majewski, Goleta ,CA 93117

Luis Villegas, Goleta ,CA 93117

Daniel Fontaine, Goleta ,CA 93117

David Holmes, Goleta ,CA 93117

Mark Luke, Goleta ,CA 93117

Robert Antonucci, Goleta ,CA 93117

Jeff Hamers, Goleta ,CA 93117

Warren Yates, Goleta ,CA 93117

Jim Patchell, Goleta ,CA 93117

Joseph Miller, Goleta ,CA 93117

Jose Flores, Goleta ,CA 93117

Andrew Vineyard, Goleta ,CA 93117

Craig Bloxham, Goleta ,CA 93117

Michael Kelly, Goleta ,CA 93117

Eric Little, Goleta ,CA 93117

Salvador Rodriguez, Santa Barbara ,CA 93111

Bruce Gale, Santa Barbara ,CA 93111

Paul Cloutier, Santa Barbara ,CA 93111

Ed Kalasky, Santa Barbara ,CA 93111

David Cox, Santa Barbara ,CA 93111

Eric Valinsky, Santa Barbara ,CA 93111

Walt Gichoiler, Santa Barbara ,CA 93111

Suresh Sampath, Santa Barbara ,CA 93111

Matt Norris, Santa Barbara ,CA 93111

Jim Owens, Santa Barbara ,CA 93111

Bruce Bimber, Santa Barbara ,CA 93111

Mark Russo, Santa Barbara ,CA 93111

Micheal Murray, Santa Barbara ,CA 93111

Kenneth Ramirez, Santa Barbara ,CA 93111

Charles Ford, Santa Barbara ,CA 93111

Manny Ayala, Goleta ,CA 93117

Max Ortega, Goleta ,CA 93117

Russell Mish, Goleta ,CA 93117

Ron Swick, Goleta ,CA 93117

Elizabeth Robinson, Goleta ,CA 93117

Timothy Burgess, Goleta ,CA 93117

Barry Hughes, Goleta ,CA 93117

Garrett Graham, Goleta ,CA 93117

Steven Tighe, Goleta ,CA 93117

Logan McMurtrey Banks, Goleta ,CA 93117

Brandon Mowery, Goleta ,CA 93117

David Newman, Goleta ,CA 93117

Per Blix, Goleta ,CA 93117

Robert Craig, Goleta ,CA 93117

Daniel Rubio, Goleta ,CA 93117

Duane Franzen, Goleta ,CA 93117

Sean Edmondson, Goleta ,CA 93117

Steven Harper, Goleta ,CA 93117

Riley Herman, Goleta ,CA 93117

David Abel, Goleta ,CA 93117

Jim Morrison, Goleta ,CA 93117

Douglas Allard, Goleta ,CA 93117

Dan Rothschild, Goleta ,CA 93117

Daniel Laub, Goleta ,CA 93117

Manny Garcia, Goleta ,CA 93117

Marcos Chiappe, Goleta ,CA 93117

Alan Hoffman, Goleta ,CA 93117

Alan McIntosh, Goleta ,CA 93117

Ed Ang, Goleta ,CA 93117

Bob Grasa, Goleta ,CA 93117

Juan Frausto, Goleta ,CA 93117

Kyle Sullivan, Goleta ,CA 93117

Richard Jenkins, Goleta ,CA 93117

Brad Weals, Goleta ,CA 93117

Scott Perry, Goleta ,CA 93117

Eric Klein, Goleta ,CA 93117

Clay Dickens, Goleta ,CA 93117

Erlinda Baggao, Goleta ,CA 93117

Srinivasan Ramaraj, Goleta ,CA 93117

Beverly Dela Cruz, Goleta ,CA 93117

Cliff Kramer, Goleta ,CA 93117

Aaron Ferguson, Goleta ,CA 93117

Nicholas Priester, Goleta ,CA 93117

Paul Jorgenson, Goleta ,CA 93117

Stephen Sherlock, Goleta ,CA 93117

Patrick Corcoran, Goleta ,CA 93117

Adam Feinstein, Santa Barbara ,CA 93111

Scott Smyers, Santa Barbara ,CA 93111

Chris Hantgin, Santa Barbara ,CA 93111

Karl Koerbling, Santa Barbara ,CA 93111

Gardner Baggao, Santa Barbara ,CA 93111

James Hoyt, Santa Barbara ,CA 93111

Peter Love, Santa Barbara ,CA 93111

Lance Pifer, Santa Barbara ,CA 93111

Bradford Wolf, Santa Barbara ,CA 93111

Tom Phillips, Santa Barbara ,CA 93111

Vincent Brock, Goleta ,CA 93111

Augustus Albertsen, Santa Barbara ,CA 93111

Steve Morris, Santa Barbara ,CA 93111

Jennifer Awramik, Santa Barbara ,CA 93111

Bob Cannon, Santa Barbara ,CA 93111

Alan Giovanacchi, Santa Barbara ,CA 93111

Eden Jasiorkowski, Santa Barbara ,CA 93111

Murray Ruben, Goleta ,CA 93111

Joshua Van Orsdel, Santa Barbara ,CA 93111

Mark Westerhoff, Santa Barbara ,CA 93111

Mark Pritchard, Santa Barbara ,CA 93111

James Cuttle, Santa Barbara ,CA 93111

Dean Wescott, Santa Barbara ,CA 93111

Christoph Pierre, Santa Barbara ,CA 93111

Ernesto Paredes, Santa Barbara ,CA 93111

Joshua Ratelle, Santa Barbara ,CA 93111

Gregory Scarcello, Santa Barbara ,CA 93111

David Morris, Santa Barbara ,CA 93111

Bob Faulkner, Santa Barbara ,CA 93111

Neil Polans, Santa Barbara ,CA 93111

Patrick Kuga, Santa Barbara ,CA 93111

Andres Prieto-Moreno, Santa Barbara ,CA 93111

Mike Mowers, Santa Barbara ,CA 93111

Tim Lynch, Santa Barbara ,CA 93111

Richard Evans, Santa Barbara ,CA 93111

Daniel Cortina, Santa Barbara ,CA 93111

Fred Graybill, Santa Barbara ,CA 93111

Thomas Kanusky, Santa Barbara ,CA 93111

Patrick Siefe, Santa Barbara ,CA 93111

Daniel Woodman, Santa Barbara ,CA 93111

Kendall Kuga, Santa Barbara ,CA 93111

Stephen Franco, Santa Barbara ,CA 93111

Ed Behres, Santa Barbara ,CA 93111

Alan Rice, Santa Barbara ,CA 93111

Stephen Ferry, Santa Barbara ,CA 93111

Jack Tiethof, Santa Barbara ,CA 93111

Brandon Gregorio, Santa Barbara ,CA 93111

Dennis Mihora, Santa Barbara ,CA 93111

Maxwell Martin, Santa Barbara ,CA 93111

Brian Anderson, Santa Barbara ,CA 93111

Paul Freeman, Santa Barbara ,CA 93111

Joel Dee, Santa Barbara ,CA 93111

Steve Lough, Santa Barbara ,CA 93111

Rick Scott, Santa Barbara ,CA 93111

Larry Murdock, Santa Barbara ,CA 93111

Pete Hollis, Santa Barbara ,CA 93111

Albert Fimlaid, Santa Barbara ,CA 93111

Patrick Franklin, Santa Barbara ,CA 93111

David Meldrum-Taylor, Santa Barbara ,CA 93111

Richard Miller, Santa Barbara ,CA 93111

Brendan Greene, Santa Barbara ,CA 93111

Sean Mclaughlin, Santa Barbara ,CA 93109

Otis Calef, Santa Barbara ,CA 93109

Tom Waterfall, Santa Barbara ,CA 93109

Daniel Hankey, Santa Barbara ,CA 93109

William Pave, Santa Barbara ,CA 93109

Matthew Dunham, Santa Barbara ,CA 93109

Kyle Meisterling, Santa Barbara ,CA 93110

Emerson Pizzinat, Santa Barbara ,CA 93110

Brian Orosco, Santa Barbara ,CA 93110

Ken Faulk, Santa Barbara ,CA 93110

Jeff Deren, Santa Barbara ,CA 93110

Adam Zimmerman, Santa Barbara ,CA 93110

Marko Srdanov, Santa Barbara ,CA 93110

Noah Baker, Santa Barbara ,CA 93110

Richard Morrow, Santa Barbara ,CA 93110

Victor Sigismondi, Santa Barbara ,CA 93110

Patrick Shove, Santa Barbara ,CA 93110

Roberto Dejesus, Santa Barbara ,CA 93110

Scott Harwin, Santa Barbara ,CA 93110

Richard Salas, Santa Barbara ,CA 93110

Jose Hernandez, Santa Barbara ,CA 93110

Brandon Brown, Santa Barbara ,CA 93110

Otis Jones, Hope Ranch ,CA 93110

David Aguilar, Santa Barbara ,CA 93110

Tom Meaney, Santa Barbara ,CA 93110

Alex Mook, Santa Barbara ,CA 93110

Thomas Parenteau, Santa Barbara ,CA 93110

Larry Trager, Goleta ,CA 93110

Benjamin McKenzie, Santa Barbara ,CA 93110

Phillip Whaley, Santa Barbara ,CA 93110

Paul Mazzetti, Santa Barbara ,CA 93110

Peter Quimby, Santa Barbara ,CA 93110

Warner McGrew, Santa Barbara ,CA 93110

Eric Miller, Santa Barbara ,CA 93110

Jeff McCune, Santa Barbara ,CA 93110

Jeffrey Jennings, Santa Barbara ,CA 93110

James Selzler, Santa Barbara ,CA 93110

R Douglass Binkley, Santa Barbara ,CA 93110

John Pham, Santa Barbara ,CA 93110

Cody Hartley, Santa Barbara ,CA 93110

Kenneth Mueller, Santa Barbara ,CA 93111

Nathan Eisler, Santa Barbara ,CA 93111

George Michaels, Santa Barbara ,CA 93111

Bryce Augustine, Santa Barbara ,CA 93111

Robert Simon, Santa Barbara ,CA 93111

Robert Hamber, Santa Barbara ,CA 93111

Ruben Gonzalez, Santa Barbara ,CA 93111

Stephen Long, Santa Barbara ,CA 93111

Wayne Stelly, Santa Barbara ,CA 93111

Vladimir Aksenov, Santa Barbara ,CA 93111

Jose Trujillo, Santa Barbara ,CA 93111

Benjamin Griswell, Santa Barbara ,CA 93111

Dan Molina, Santa Barbara ,CA 93111

Dennis Loyst, Santa Barbara ,CA 93111

Alvin Pascual, Santa Barbara ,CA 93111

Eric Peterson, Santa Barbara ,CA 93111

Marvin Harrah, Santa Barbara ,CA 93111

Richard Enloe, Santa Barbara ,CA 93111

Donald Bell, Santa Barbara ,CA 93111

John Thompson, Santa Barbara ,CA 93111

Steven Mcmurtry, Santa Barbara ,CA 93111

Lanny Sherwin, Santa Barbara ,CA 93108

Chad Carty, Santa Barbara ,CA 93108

Ken Rourke, Santa Barbara ,CA 93108

Robbie Jacobs, Santa Barbara ,CA 93108

James Thomas, Santa Barbara ,CA 93108

Frank Stapelmann, Santa Barbara ,CA 93109

Leonard Chen, Santa Barbara ,CA 93109

Jozef Vasquz, Santa Barbara ,CA 93109

Steve Barr, Santa Barbara ,CA 93109

Chris Klinger, Santa Barbara ,CA 93109

Mark Benson, Santa Barbara ,CA 93109

Carl Hallman, Santa Barbara ,CA 93109

Michael Ramsey, Santa Barbara ,CA 93109

David Galloway, Santa Barbara ,CA 93109

Owen Storm, Santa Barbara ,CA 93109

Tom Cahill, Santa Barbara ,CA 93109

Steve Lewis, Santa Barbara ,CA 93109

Hugh Kelly, Santa Barbara ,CA 93109

Craig Farnham, Santa Barbara ,CA 93109

Don Mazza, Santa Barbara ,CA 93109

Ken Stovall, Santa Barbara ,CA 93109

Andrew Sage, Santa Barbara ,CA 93109

Lawrence Dillard, Santa Barbara ,CA 93109

John Kirk, Santa Barbara ,CA 93109

Nick Svensson, Santa Barbara ,CA 93109

Thomas Cahill, Santa Barbara ,CA 93109

Chris Cottrell, Santa Barbara ,CA 93109

Bob Stout, Santa Barbara ,CA 93109

Peter Alpert, Santa Barbara ,CA 93109

Christopher Roderick, Santa Barbara ,CA 93109

Jean Wollenberg, Santa Barbara ,CA 93109

Toni Mochi, Santa Barbara ,CA 93109

Christina Robinette, Santa Barbara ,CA 93105

Laurie Moody, Santa Barbara ,CA 93105

Katy McDaniel, Santa Barbara ,CA 93105

Mary Solis, Santa Barbara ,CA 93105

Diane Kemp, Santa Barbara ,CA 93105

Linda Taber, Santa Barbara ,CA 93105

Sharon Gonce, Santa Barbara ,CA 93105

Claire Fackler, Santa Barbara ,CA 93105

Wendy Roger, Santa Barbara ,CA 93105

Georganne Alex, Santa Barbara ,CA 93105

Joyce McCullough, Santa Barbara ,CA 93105

Susan Kircos, Santa Barbara ,CA 93105

Tara Rizzi, Santa Barbara ,CA 93105

Carole Clarke, Santa Barbara ,CA 93101

Yvonne Blanco, Santa Barbara ,CA 93103

Vijaya Jammalamadaka, Santa Barbara ,CA 93103

Karen Strickland, Santa Barbara ,CA 93103

Sara Woodburn, Santa Barbara ,CA 93101

Michal Ricardo, Santa Barbara ,CA 93101

Cerena Childress, Santa Barbara ,CA 93101

Stacey Gannon, Santa Barbara ,CA 93101

Susan Rakov, Santa Barbara ,CA 93101

Jessica Scheeter, Goleta ,CA 93117

Mary Brecher, Goleta ,CA 93117

Maureen Hislop, Goleta ,CA 93117

Kim Lawler, Goleta ,CA 93117

Stacy Borek, Santa Barbara ,CA 93111

Heather Blanco, Goleta ,CA 93117

Pat Robertson, Goleta ,CA 93117

Joyce Johnson, Santa Barbara ,CA 93111

Elaine Stevenson, Santa Barbara ,CA 93111

Amy Gates, Santa Barbara ,CA 93111

Diane Johnson, Santa Barbara ,CA 93110

Carol Beamer, Santa Barbara ,CA 93111

Carol Craviotto, Santa Barbara ,CA 93111

Diana Kelly, Santa Barbara ,CA 93109

Jennifer Hurd, Carpinteria ,CA 93013

Sarah Eglin, Montecito ,CA 93108

Zoe Primrose, Montecito ,CA 93108

Katherine Davidson, Santa Barbara ,CA 93108

Jocelyne Tufts, Santa Barbara ,CA 93108

Jennifer Rawlings, Santa Barbara ,CA 93109

Diaz Trina, Santa Barbara ,CA 93109

Stacey Brown, Santa Barbara ,CA 93109

Linda Ashmore, Santa Barbara ,CA 93109

Carol Huerta, Santa Barbara ,CA 93109

Myla Kato, Santa Barbara ,CA 93109

Jessica O'Sullivan, Santa Barbara ,CA 93109

Sylvia Rivera, Santa Barbara ,CA 93109

Nancy Ferguson, Santa Barbara ,CA 93109

Felicia Kashevaroff, Santa Barbara ,CA 93109

Diane Palladino, Santa Barbara ,CA 93109

Megan Moyer, Santa Barbara ,CA 93109

Tara Smith, Santa Barbara ,CA 93109

Tina Pfadenhauer, Santa Barbara ,CA 93109

Laurie McDonald, Santa Barbara ,CA 93109

Susan Spencer, Santa Barbara ,CA 93109

Leandra Gilbert, Santa Barbara ,CA 93109

Tara King, Santa Barbara ,CA 93109

Joy Robledo, Santa Barbara ,CA 93109

Judith Long, Santa Barbara ,CA 93109

Lilia Smith, Santa Barbara ,CA 93109

Ann Bradbury, Santa Barbara ,CA 93109

Trina Diaz, Santa Barbara ,CA 93109

Sarah Carr, Santa Barbara ,CA 93109

Cynthia Macy, Santa Barbara ,CA 93109

Mary Norton, Santa Barbara ,CA 93109

Martha Noble, Santa Barbara ,CA 93109

Juanita Chatham, Santa Barbara ,CA 93109

Chris Kent, Santa Barbara ,CA 93109

Susan Levine, Santa Barbara ,CA 93109

Rosanne Conaway, Santa Barbara ,CA 93109

Rita Banson, Santa Barbara ,CA 93109

Zoe Wood, Santa Barbara ,CA 93109

Ilene Segalove, Santa Barbara ,CA 93109

Sophia Kohacker, Santa Barbara ,CA 93109

Ellen Yeomans, Santa Barbara ,CA 93109

Lorette Elzein, Santa Barbara ,CA 93109

Katty Herrera, Santa Barbara ,CA 93110

Cecily Murrieta, Santa Barbara ,CA 93110

Jessica McLernon, Santa Barbara ,CA 93110

Sherry Morez, Santa Barbara ,CA 93110

Jackie Martin, Santa Barbara ,CA 93110

Wendy Simons, Santa Barbara ,CA 93110

Linda Murray, Santa Barbara ,CA 93110

Catherine Gloster, Santa Barbara ,CA 93110

Nancy Darrow, Santa Barbara ,CA 93110

Lisa Hugo, Santa Barbara ,CA 93110

Ime Marquez, Santa Barbara ,CA 93110

Nancy Rose, Santa Barbara ,CA 93110

Ann Rudolph, Santa Barbara ,CA 93110

Gina Randall, Santa Barbara ,CA 93110

Jane Haas, Santa Barbara ,CA 93110

Autumn Brook, Santa Barbara ,CA 93110

Sandy Lyon, Santa Barbara ,CA 93110

Tonya Szele, Santa Barbara ,CA 93110

Erin McCune, Santa Barbara ,CA 93110

Evonne Risdall, Santa Barbara ,CA 93110

Vivian Jiminez, Santa Barbara ,CA 93110

Audrey Austin, Santa Barbara ,CA 93110

Rachel Metz, Santa Barbara ,CA 93110

Carrie Little, Santa Barbara ,CA 93110

Elena Solis, Santa Barbara ,CA 93110

Sophia Davis, Santa Barbara ,CA 93110

Virginia Samario, Santa Barbara ,CA 93110

Bertha Cordeiro, Santa Barbara ,CA 93110

Linda Whitman, Santa Barbara ,CA 93110

Kathie Mashni, Santa Barbara ,CA 93110

Judith Bailey, Santa Barbara ,CA 93110

Renee Depaco, Santa Barbara ,CA 93110

Patricia Cisneros, Santa Barbara ,CA 93110

Diane Snow, Santa Barbara ,CA 93110

Teresa Petter, Santa Barbara ,CA 93110

Megan Busko, Santa Barbara ,CA 93110

Julie Miller, Santa Barbara ,CA 93110

Phyliss Cohen, Santa Barbara ,CA 93110

Nancy Dubie, Santa Barbara ,CA 93110

Nancy Pierson, Santa Barbara ,CA 93110

Martha Levy, Santa Barbara ,CA 93110

Joan McGrew, Santa Barbara ,CA 93110

Eileen Daley, Santa Barbara ,CA 93110

Judy Wood, Santa Barbara ,CA 93110

Donna Glenn, Santa Barbara ,CA 93110

Tori Shyrock, Santa Barbara ,CA 93110

Wendy Wagner, Santa Barbara ,CA 93110

Brenda Price, Santa Barbara ,CA 93111

Patricia Pascua, Santa Barbara ,CA 93111

Leslie Edgerton, Santa Barbara ,CA 93111

Ann Lewis, Santa Barbara ,CA 93111

Deborah Steffen, Santa Barbara ,CA 93111

Elizabeth Meagher, Santa Barbara ,CA 93111

Betty Eliason, Santa Barbara ,CA 93111

Imelda Ketterer, Santa Barbara ,CA 93111

Judy Blanco, Santa Barbara ,CA 93111

Nancy Osborne, Santa Barbara ,CA 93111

Ellen Dameion, Santa Barbara ,CA 93111

Rosalie Yeager, Santa Barbara ,CA 93111

Carol Morgan, Santa Barbara ,CA 93111

Erin Smith, Santa Barbara ,CA 93111

Laura Davidson, Santa Barbara ,CA 93111

Jacque Book, Santa Barbara ,CA 93111

Janey Hunter, Santa Barbara ,CA 93111

Wendy Branch, Santa Barbara ,CA 93111

Lynne Hannay, Santa Barbara ,CA 93111

Lisa Rothstein, Santa Barbara ,CA 93111

Deborah Olivera, Santa Barbara ,CA 93111

Mary Lewandowski, Santa Barbara ,CA 93111

Annette Cordero, Santa Barbara ,CA 93111

Diane Galvan, Santa Barbara ,CA 93111

Emily Hart-roberts, Santa Barbara ,CA 93111

Chantel Polizzi, Santa Barbara ,CA 93111

Jennifer Davy, Santa Barbara ,CA 93111

Andra Dillard, Santa Barbara ,CA 93111

Lisa Gonzales, Santa Barbara ,CA 93111

Elizabeth LaCaze, Santa Barbara ,CA 93111

Jinny Chang, Goleta ,CA 93111

Farfolla Borah, Santa Barbara ,CA 93111

Diana Jauchen, Santa Barbara ,CA 93111

Cari Bish, Santa Barbara ,CA 93111

Blanca Boenisch, Santa Barbara ,CA 93111

Nancy Campbell, Santa Barbara ,CA 93111

Clare Barrios Knox, Santa Barbara ,CA 93111

Lisa Kiefer, Santa Barbara ,CA 93111

Mary Willis, Santa Barbara ,CA 93111

Lisa Perocco, Santa Barbara ,CA 93111

Kimberly Aragon, Santa Barbara ,CA 93111

Holly Angel, Santa Barbara ,CA 93111

Mirasol Quinonez, Santa Barbara ,CA 93111

Anne Spencer, Santa Barbara ,CA 93111

Julie Newendorp, Santa Barbara ,CA 93111

Diane Salazar, Santa Barbara ,CA 93111

Bonnie Baker, Santa Barbara ,CA 93111

Claudia Scott, Santa Barbara ,CA 93111

Teresa Pietsch, Santa Barbara ,CA 93111

Rachel Tobler, Santa Barbara ,CA 93111

Lorraine Taylor, Santa Barbara ,CA 93111

Laura Esqueda, Santa Barbara ,CA 93111

Cynthia Villarreal, Santa Barbara ,CA 93111

Loralyn Lofstrom, Santa Barbara ,CA 93111

Diana Montoya, Santa Barbara ,CA 93111

Maria Cardenas, Santa Barbara ,CA 93111

Mariel Rosensweet, Santa Barbara ,CA 93111

Mary Espino, Santa Barbara ,CA 93111

Susan Farley, Santa Barbara ,CA 93111

Joann Magistad, Santa Barbara ,CA 93111

Mary Lou Furrer, Santa Barbara ,CA 93111

Marianne Morris, Santa Barbara ,CA 93111

Diane Kirkpatrick, Santa Barbara ,CA 93111

Elizabeth Vargas, Santa Barbara ,CA 93111

Patricia Dunselman, Santa Barbara ,CA 93111

Kathy Bushnell, Santa Barbara ,CA 93111

Laina Melendez, Santa Barbara ,CA 93111

Angelica Ortega, Santa Barbara ,CA 93111

Lynne Dozier, Santa Barbara ,CA 93111

Mary Palomarez, Santa Barbara ,CA 93111

Katy Romero, Santa Barbara ,CA 93111

Catherine Mccool, Santa Barbara ,CA 93111

Ellen Goldman, Santa Barbara ,CA 93111

Joan Jones, Santa Barbara ,CA 93111

Raye Haskell, Santa Barbara ,CA 93111

Laura Ardry, Santa Barbara ,CA 93111

Janet Gunson, Santa Barbara ,CA 93111

Farah Siersma, Santa Barbara ,CA 93111

Amanda Jensen, Santa Barbara ,CA 93111

Joanne Thompson, Santa Barbara ,CA 93111

Karen Zell, Santa Barbara ,CA 93111

Bev Abrams, Santa Barbara ,CA 93111

Isabel Esparza, Santa Barbara ,CA 93111

Michele Johnson, Santa Barbara ,CA 93111

Patricia Dawson, Santa Barbara ,CA 93111

Cristina Clarke, Santa Barbara ,CA 93111

Ashley Maurin, Santa Barbara ,CA 93111

Cindy Poire, Santa Barbara ,CA 93111

Joanne Mcmurtry, Santa Barbara ,CA 93111

Trevor Kasmar, Santa Barbara ,CA 93111

Melisa Gleason, Santa Barbara ,CA 93111

Jessica Hogan, Santa Barbara ,CA 93111

Karen Harris, Santa Barbara ,CA 93111

Lisa Volmar, Santa Barbara ,CA 93111

Barbara Chehami, Santa Barbara ,CA 93111

Marie Arnold, Santa Barbara ,CA 93111

Nancy Rose, Santa Barbara ,CA 93111

Cathy Quiel, Santa Barbara ,CA 93111

Hollie Elmer, Santa Barbara ,CA 93111

Jane Galbraith, Santa Barbara ,CA 93111

Dolores and Bill Pollock, Santa Barbara ,CA 93111

Kimberly Ford, Santa Barbara ,CA 93111

Jane Honikman, Santa Barbara ,CA 93111

Karen Lindblad, Santa Barbara ,CA 93111

Olivia Loeza, Santa Barbara ,CA 93111

Rosa Marie Booth, Santa Barbara ,CA 93111

Katie Newendorp, Santa Barbara ,CA 93111

Sandie Chase, Santa Barbara ,CA 93111

Lisa Tait, Santa Barbara ,CA 93111

Emily Termond, Santa Barbara ,CA 93111

Rebecca Iglesias, Santa Barbara ,CA 93111

Marguerite Conway, Santa Barbara ,CA 93111

Stephanie Welch, Santa Barbara ,CA 93111

Corinna Gallardo, Santa Barbara ,CA 93111

Doris Bleecher, Santa Barbara ,CA 93111

Carissa Guzman, Santa Barbara ,CA 93111

Patricia Kreiss, Santa Barbara ,CA 93111

Mary Lawson, Santa Barbara ,CA 93111

Barbara Altman, Santa Barbara ,CA 93111

Marian Rothstein, Santa Barbara ,CA 93111

Deb Artz, Santa Barbara ,CA 93111

Karen Va Gool, Santa Barbara ,CA 93111

Kristian Blom, Santa Barbara ,CA 93111

Monique Montgomery, Santa Barbara ,CA 93111

Kalai Kennedy, Santa Barbara ,CA 93111

Karen Hyslop, Santa Barbara ,CA 93111

Valerie Allen, Santa Barbara ,CA 93111

Susan Ehrlich, Santa Barbara ,CA 93111

Mayra Aispuro, Goleta ,CA 93111

Deborah Kiffe, Santa Barbara ,CA 93111

Elizabeth Yeager, Santa Barbara ,CA 93111

Helen Santoyo, Santa Barbara ,CA 93111

Linda Liker, Santa Barbara ,CA 93111

Andrea Jorgensen, Santa Barbara ,CA 93111

Carol Marshall, Santa Barbara ,CA 93111

Teri McDuffie, Santa Barbara ,CA 93111

Laurel Hansch, Santa Barbara ,CA 93111

LeAnn Filice, Santa Barbara ,CA 93111

Valerie Voita, Santa Barbara ,CA 93111

Bonnie Smiley, Goleta ,CA 93117
Barbara Kubel, Goleta ,CA 93117
Janie Bozeman, Goleta ,CA 93117
Jera Janzen, Goleta ,CA 93117
Cheryl Eberharter, Goleta ,CA 93117
Linda Arroyo, Goleta ,CA 93117
Tara Hug, Goleta ,CA 93117
Celia Schmidt, Goleta ,CA 93117
Amy Herzog, Goleta ,CA 93117
Jeannine Serbanich, Goleta ,CA 93117
Maria Martinez De Casian, Goleta ,CA 93117

Eva Turenchalk, Goleta ,CA 93117
Karen Whitmore, Goleta ,CA 93117
Alexandra Freeman, Goleta ,CA 93117
Anna James, Goleta ,CA 93117
Jessica Callander, Goleta ,CA 93117
Barbara Smith, Goleta ,CA 93117
Carmen Torres, Goleta ,CA 93117
Liliana Ocampo, Goleta ,CA 93117
Yvonne Moccardini, Goleta ,CA 93117
Vivian Rangel, Goleta ,CA 93117
Paige Swanson, Goleta ,CA 93117
Deb Carnal, Goleta ,CA 93117

Angela Bryan, Goleta ,CA 93117
Kathleen Sharp, Goleta ,CA 93117
Kristen Dinkle, Goleta ,CA 93117
Rachel Ray, Goleta ,CA 93117
Rae Jean Leu, Goleta ,CA 93117
Judith Betancourt, Goleta ,CA 93117
Marilyn Blomstrand, Goleta ,CA 93117
Michelle Kosinski, Goleta ,CA 93117
Peder Lenvik, Goleta ,CA 93117
Lori Lindgren, Goleta ,CA 93117
Marcie Martinez, Goleta ,CA 93117
Diana Thomas, Goleta ,CA 93117
Amy Damron, Goleta ,CA 93117
Sonja Renda, Goleta ,CA 93117
Megan Dallas, Goleta ,CA 93117
Jennifer Harting, Goleta ,CA 93117
Heike Hyson, Goleta ,CA 93117
Sara Iza, Goleta ,CA 93117
Gayle Labrana, Goleta ,CA 93117
Mary Anne Hanley, Goleta ,CA 93117
Claudia Jimenez, Goleta ,CA 93117
Alicia Anderson, Goleta ,CA 93117
Maria Godinez, Goleta ,CA 93117

Tammy Shorb, Goleta ,CA 93117
Kate Xavbreugu, Goleta ,CA 93117
Mary Lebeck, Goleta ,CA 93117
Cassie Macias, Goleta ,CA 93117
Nancy Szulczewski, Goleta ,CA 93117
Andrea Weir, Goleta ,CA 93117
Allison Grisham, Goleta ,CA 93117
Teresa Alfino, Goleta ,CA 93117
Dawnielle Burich, Goleta ,CA 93117
Jennifer Forouzandeh, Goleta ,CA 93117

Emma Fuentes, Goleta ,CA 93117
Lucy Hughes, Goleta ,CA 93117
Ruth Jackson, Goleta ,CA 93117
Virginia Colina, Goleta ,CA 93117
Judith Aguilar, Goleta ,CA 93117
Kathy Battson, Goleta ,CA 93117
Erica Smith, Goleta ,CA 93117
Maria Alvarez, Goleta ,CA 93117
Jeane Johnson, Goleta ,CA 93117
Karen Aldenderfer, Goleta ,CA 93117
Patricia Strojek, Goleta ,CA 93117
Mollie Moore, Goleta ,CA 93117
Deryck Stave, Goleta ,CA 93117

Mariko Tabar, Goleta ,CA 93117
Annette Taylor, Goleta ,CA 93117
Linda Broderick, Goleta ,CA 93117
Isabel Barraza, Goleta ,CA 93117
Laura Rodriguez, Goleta ,CA 93117
Lynn Mayeda, Goleta ,CA 93117
Savannah Johns-Pedrocchi, Goleta ,CA 93117

Shalon Edwards, Goleta ,CA 93117
Lori Clayton, Goleta ,CA 93117
Tania Gil, Goleta ,CA 93117
Christine Briones, Goleta ,CA 93117
Deana Gilman, Goleta ,CA 93117
Maria Huerta, Goleta ,CA 93117
Kristin Castorino, Goleta ,CA 93117
Margaret Clipper, Goleta ,CA 93117
Catherine Foy, Goleta ,CA 93117
Pat Snyder, Goleta ,CA 93117
Rocio Rojas, Goleta ,CA 93117
Amber Druckman, Goleta ,CA 93117
Sandra Stockero, Goleta ,CA 93117
Maria Lopez, Goleta ,CA 93117
Hillary Conant, Goleta ,CA 93117
Maria Macduff, Goleta ,CA 93117

Violeta Cortez, Goleta ,CA 93117
Kate Keeley, Goleta ,CA 93117
Elma Aguilera, Goleta ,CA 93117
Theresa Gonzalez, Goleta ,CA 93117
Julie Holden, Goleta ,CA 93117
Marie Dornan, Goleta ,CA 93117
Kathleen Symer, Goleta ,CA 93117
Jennifer Matthews, Goleta ,CA 93117
Jeannine Davids, Goleta ,CA 93117
Amanda Morrison, Goleta ,CA 93117
Nicole Elliott, Goleta ,CA 93117
Sunday Chheng, Goleta ,CA 93117
Janet Benner, Santa Barbara ,CA 93117
Irma Machuca, Goleta ,CA 93117
Robert Schmitt, Goleta ,CA 93117
Shelia Finn, Goleta ,CA 93117
Sandy Gorman, Goleta ,CA 93117
Marian Shapiro, Goleta ,CA 93117
Susie Bozzini, Goleta ,CA 93117
Julie Dyer, Goleta ,CA 93117
Kristin Cothorn, Goleta ,CA 93117
Brenda McGowan, Goleta ,CA 93117
Denise Segura, Goleta ,CA 93117

Yvonne Kleeburg, Goleta ,CA 93117
Bertha Ruiz, Goleta ,CA 93117
Rebecca Potter, Goleta ,CA 93117
Susan Smiley, Goleta ,CA 93117
Rosa Martinez, Goleta ,CA 93117
Kathryn Vanetti, Goleta ,CA 93117
Georgette M Kerry, Goleta ,CA 93117
Margaret Slater, Goleta ,CA 93117
Natasha Madrigal, Goleta ,CA 93117
Carla Whitacre, Goleta ,CA 93117
Shanna Taylor, Goleta ,CA 93117
Melissa Hug, Goleta ,CA 93117
Barbara Voorhies, Goleta ,CA 93117
Lisa Affronti, Goleta ,CA 93117
Caitlin Malone, Goleta ,CA 93117
Laurinda Marshall, Goleta ,CA 93117
Robyn Domizio, Goleta ,CA 93117
Michelle Stivers, Goleta ,CA 93117
Denise Mann, Goleta ,CA 93117
Kathy Robledo, Goleta ,CA 93117
Dawn Hovey, Goleta ,CA 93117
Christa Gumtow, Goleta ,CA 93117
Cecilia Melendez, Goleta ,CA 93117

Catherine Padilla, Goleta ,CA 93117
Laura Lum, Goleta ,CA 93117
Nancy Gaston, Goleta ,CA 93117
Cassandra Brower, Santa Barbara ,CA 93101

Christina Eliason, Santa Barbara ,CA 93101

Joanna Alvarez, Santa Barbara ,CA 93101

Nancy Parker, Santa Barbara ,CA 93101

Jennie Jacobs, Santa Barbara ,CA 93101

Marcia Moore, Santa Barbara ,CA 93101

Karen Beckstead, Santa Barbara ,CA 93101

Brigitte Horstman, Santa Barbara ,CA 93101

Kim Forney, Santa Barbara ,CA 93101

Alejandra Gudino, Santa Barbara ,CA 93101

Albertina Loureici, Santa Barbara ,CA 93101

Terese Chin, Santa Barbara ,CA 93101

Olga Jones, Santa Barbara ,CA 93101

Trina Armitage, Santa Barbara ,CA 93101

Paige Clendenen, Santa Barbara ,CA 93101

Ann Jamison, Santa Barbara ,CA 93101
Enid Sterling, Santa Barbara ,CA 93101
Yolanda Marroquin, Santa Barbara ,CA 93101

Annie Powell, Santa Barbara ,CA 93101
Cathy Sanchez, Santa Barbara ,CA 93101

Chelsea Jones, Santa Barbara ,CA 93101

Lisa Krause, Santa Barbara ,CA 93101
Rhonda Slavik, Santa Barbara ,CA 93101

Mary McMaster, Santa Barbara ,CA 93101

Amy Hawkins, Santa Barbara ,CA 93101

Andrea Leyva, Santa Barbara ,CA 93101

Ginny Brush, Santa Barbara ,CA 93101
Kathryn Pieron, Santa Barbara ,CA 93101

Barbara Wishingrad, Santa Barbara ,CA 93101

Maria Aguilar, Santa Barbara ,CA 93101
Denise Jimenez, Santa Barbara ,CA 93101

Lindsay Coony, Santa Barbara ,CA 93101

Carol Bond-Barney, Santa Barbara ,CA 93101

Helen Hellstern, Santa Barbara ,CA 93101

Elizabeth Beckner, Santa Barbara ,CA 93101

Diane Koornwinder, Santa Barbara ,CA 93101

Judith White, Santa Barbara ,CA 93101

Alysia Bisquera, Santa Barbara ,CA 93101

Elizabeth Smith, Santa Barbara ,CA 93101

Aliza Nizet, Santa Barbara ,CA 93101

Dianne Lopez, Santa Barbara ,CA 93101

Virginia Carrillo, Santa Barbara ,CA 93101

Ana Hernandez, Santa Barbara ,CA 93101

Katya Armistead, Santa Barbara ,CA 93101

Sandra Limon, Santa Barbara ,CA 93101

Martha Holman, Santa Barbara ,CA 93101

Ida Valente, Santa Barbara ,CA 93101

Kate Wallace, Santa Barbara ,CA 93101

Vanessa Elias, Santa Barbara ,CA 93101

Barbara Hirsch, Santa Barbara ,CA 93101

Emily Brummond, Santa Barbara ,CA 93101

Silvia Alvarez, Santa Barbara ,CA 93101

Cheri Gurse, Santa Barbara ,CA 93101

Jennifer Davis, Santa Barbara ,CA 93101

Martha Sadler, Santa Barbara ,CA 93101

Robin Hamlin, Santa Barbara ,CA 93101

Mariana Diaz, Santa Barbara ,CA 93101

Karen Rudolics, Santa Barbara ,CA 93101

Denise Berdan, Santa Barbara ,CA 93101

Laura Rhoads, Santa Barbara ,CA 93101

Audrey Cruz, Santa Barbara ,CA 93101

Deana Blackwood, Santa Barbara ,CA 93101

Karla Torres, Santa Barbara ,CA 93101

M Sanchez, Santa Barbara ,CA 93101

Kay Stevens, Santa Barbara ,CA 93101

Meri Clarke, Santa Barbara ,CA 93101

Kathleen McGuire, Santa Barbara ,CA 93101

Lisa Kuehn, Santa Barbara ,CA 93101

Amy Bristol, Santa Barbara ,CA 93101

Monica Ziemer, Santa Barbara ,CA 93101

Linda Mason, Santa Barbara ,CA 93101

Randy Meaney, Santa Barbara ,CA 93101

Emma Cantu, Santa Barbara ,CA 93101

Elisa Wallner, Santa Barbara ,CA 93101

Amber Asher, Santa Barbara ,CA 93101

Laura Lynch, Santa Barbara ,CA 93101

Margie Bradley, Santa Barbara ,CA 93101

Mujiba Cabugas, Santa Barbara ,CA 93101

Jean Lange Davis, Santa Barbara ,CA 93101

Kathryn Abajian, Santa Barbara ,CA 93101

Elaine Schott, Santa Barbara ,CA 93101

Michael O'Connell, Santa Barbara ,CA 93101

Judy Shillington, Santa Barbara ,CA 93101

Nancy Cole, Santa Barbara ,CA 93101

Tonya Samuels, Santa Barbara ,CA 93101

Elizabeth Van Renterghem, Santa Barbara ,CA 93101

Karen Zwicke, Santa Barbara ,CA 93101

Lisa Ann Kelly and Family, Santa Barbara ,CA 93101

Michelle Doetch, Santa Barbara ,CA 93101

Susan Dunton, Santa Barbara ,CA 93101

Laura Brooks, Santa Barbara ,CA 93101

Janet Ewart, Santa Barbara ,CA 93101

Christina Nelson, Santa Barbara ,CA 93101

Susan Villegas, Santa Barbara ,CA 93101

Wendy Servellon, Santa Barbara ,CA 93101

Kristen Johansen, Santa Barbara ,CA 93101

Gail Campanella, Santa Barbara ,CA 93101

Andrea Ruhge, Santa Barbara ,CA 93101

Maria Lopez, Santa Barbara ,CA 93103

Annie Kirby, Santa Barbara ,CA 93103

Jane Hankey, Santa Barbara ,CA 93103

Alma Uribe, Santa Barbara ,CA 93103

Karla Shelton, Santa Barbara ,CA 93103

Sarah Yee, Santa Barbara ,CA 93103

Molly Troup, Santa Barbara ,CA 93103

Ann Martinov, Santa Barbara ,CA 93103

Carol Smaniotto, Santa Barbara ,CA 93103

Denisse Salinas, Santa Barbara ,CA 93103

Angela Wong, Santa Barbara ,CA 93103

Gloria Perissinotto, Santa Barbara ,CA 93103

Lorie Sanchez, Santa Barbara ,CA 93103

Cynthia Stoddard, Santa Barbara ,CA 93103

Janet Kates, Santa Barbara ,CA 93103

Nancy Baker, Santa Barbara ,CA 93103

Linda Fredericks, Santa Barbara ,CA 93103

Melissa Bower, Santa Barbara ,CA 93103

Tanya Boffman, Santa Barbara ,CA 93103

Blanca Madrigal, Santa Barbara ,CA 93103

Guillermina Padilla, Santa Barbara ,CA 93103

Tamara Berton, Santa Barbara ,CA 93103

Deborah Tice, Santa Barbara ,CA 93103

Dennis Koski, Santa Barbara ,CA 93103

Katie Koski, Santa Barbara ,CA 93103

Hattie Husbands, Santa Barbara ,CA 93103

Donna Peterson, Santa Barbara ,CA 93103

Judith Lorimer, Santa Barbara ,CA 93103

Janett Emery, Santa Barbara ,CA 93103

Kara Strickland, Santa Barbara ,CA 93103

Dixie Love, Santa Barbara ,CA 93103

Jessica Santillan, Santa Barbara ,CA 93103

Hattie Beresford, Santa Barbara ,CA 93103

Eva Kirkpatrick, Santa Barbara ,CA 93103

Barbara Bonadeo, Santa Barbara ,CA 93103

Judy Efron, Santa Barbara ,CA 93103

Gretchen Rosenblatt, Santa Barbara ,CA 93103

Pauline Banales, Santa Barbara ,CA 93103

Gloria Diaz, Santa Barbara ,CA 93103

Dawn Battles, Santa Barbara ,CA 93103

Carolyn Hobbs, Santa Barbara ,CA 93103

Jade Allmon, Santa Barbara ,CA 93103

Christine Garvey, Santa Barbara ,CA 93103

Lori Meschler, Santa Barbara ,CA 93103

Brigitte Labrentz, Santa Barbara ,CA 93103

Terry Bickmore, Santa Barbara ,CA 93103

Leanne Saar, Santa Barbara ,CA 93103

Elise Mcmillan, Santa Barbara ,CA 93103

Toni Lorien, Santa Barbara ,CA 93105

Kimberly Monda, Santa Barbara ,CA 93105

Maraka Macduff, Santa Barbara ,CA 93105

Jennifer Kelly, Santa Barbara ,CA 93105

Patti Gaultney, Santa Barbara ,CA 93105

Liz Heitmann, Santa Barbara ,CA 93105

Wendy Caldwell-Altman, Santa Barbara ,CA 93105

Rose Joost, Santa Barbara ,CA 93105

Jill Ellis, Santa Barbara ,CA 93105

Donna Ahlman, Santa Barbara ,CA 93105

Dana Spoonerow, Santa Barbara ,CA 93105

Cheri Swanh, Santa Barbara ,CA 93105

Karla Quintana, Santa Barbara ,CA 93105

Sheri Lowe, Santa Barbara ,CA 93105

Marian Von Metzger, Santa Barbara ,CA 93105

Lindsay Cooney, Santa Barbara ,CA 93105

Mary Post, Santa Barbara ,CA 93105

Jennifer Brannon, Santa Barbara ,CA 93105

Shaun Oster, Santa Barbara ,CA 93105

Nancy Sittig, Santa Barbara ,CA 93105

Katherine Hunter, Santa Barbara ,CA 93105

Jane Fehrenbacher, Santa Barbara ,CA 93105

Alison Coutts-Jordan, Santa Barbara ,CA 93105

Denise Dutra, Santa Barbara ,CA 93105

Ann Grace Corselius-Willson, Santa Barbara ,CA 93105

Donna Villa, Santa Barbara ,CA 93105

Dawn Donnell, Santa Barbara ,CA 93105

Donna Franks, Santa Barbara ,CA 93105

Bonnie Wolf, Santa Barbara ,CA 93105

Judy Headley, Santa Barbara ,CA 93105

Sandra Castellino, Santa Barbara ,CA 93105

Cara Ferrick, Santa Barbara ,CA 93105

Carrie Dahlen, Santa Barbara ,CA 93105

Wyatt Gehris, Santa Barbara ,CA 93105

Bridget Coggins, Santa Barbara ,CA 93105

Patricia Cooper, Santa Barbara ,CA 93105

Kirsten Mathieson, Santa Barbara ,CA 93105

Margaret Peavy, Santa Barbara ,CA 93105

Erin Rosendahl, Santa Barbara ,CA 93105

Sarah Washburn, Santa Barbara ,CA 93105

Penelope Cooper-Kelley, Santa Barbara ,CA 93105

Constance Thayer, Santa Barbara ,CA 93105

Cathleen Garnand, Santa Barbara ,CA 93105

Merrillee Ford, Santa Barbara ,CA 93105

Barbara Wood, Santa Barbara ,CA 93105

Christy Dose, Santa Barbara ,CA 93105

Lee Seagrave, Santa Barbara ,CA 93105

Lisa Bass, Santa Barbara ,CA 93105

Peggy Ciolino, Santa Barbara ,CA 93105

Nicole Lvoff, Santa Barbara ,CA 93105

Gina Gardener, Santa Barbara ,CA 93105

Alberta Binns, Santa Barbara ,CA 93105

Michael Hamilton, Santa Barbara ,CA 93105

Stephanie Forbes, Santa Barbara ,CA 93105

Sylvia Martin, Santa Barbara ,CA 93105

Sofia Kelly, Santa Barbara ,CA 93105

Janet Gripp, Santa Barbara ,CA 93105

Melinda Douglas, Santa Barbara ,CA 93105

Karen Kowalski, Santa Barbara ,CA 93105

Sarah Dobs, Santa Barbara ,CA 93105

Wendy Brown, Santa Barbara ,CA 93105

Sara Dill, Santa Barbara ,CA 93105

Angeli Ruiz, Santa Barbara ,CA 93105

Jayne Johann, Santa Barbara ,CA 93105

Debbie Kline, Santa Barbara ,CA 93105

Marilyn Osgood, Santa Barbara ,CA 93105

Lenore Los, Santa Barbara ,CA 93105

Autumn Malanca, Santa Barbara ,CA 93105

Emma Moore, Santa Barbara ,CA 93105

Kristy Guerrero, Santa Barbara ,CA 93105

Jennifer Bornand, Santa Barbara ,CA 93105

Bridget Clancy, Santa Barbara ,CA 93105

Marybeth Johnson, Santa Barbara ,CA 93105

Adrienne Jones, Santa Barbara ,CA 93105

Sheila Cullen, Santa Barbara ,CA 93105

Jean Mcknight, Santa Barbara ,CA 93105

Jan Oldham, Santa Barbara ,CA 93105

Kathy Marden, Santa Barbara ,CA 93105

Joyce Wilson, Santa Barbara ,CA 93105

Lorena Jimenez, Santa Barbara ,CA 93105

Ursula Librizzi, Santa Barbara ,CA 93105

Mary Beth Riordan, Santa Barbara ,CA 93105

Carol Ondrey, Santa Barbara ,CA 93105

Genevieve Guillermo, Santa Barbara ,CA 93105

Debbie Wright Ainsworth, Santa Barbara ,CA 93105

Lilli Doner, Santa Barbara ,CA 93105

Laura Roth, Santa Barbara ,CA 93105

Christina Bolton, Santa Barbara ,CA 93105

Susan Levine, Santa Barbara ,CA 93105

Michelle Detorie, Santa Barbara ,CA 93105

Anna Raye Clarke, Santa Barbara ,CA 93105

Bonnie Sivers, Santa Barbara ,CA 93105

Debbie Castanha, Santa Barbara ,CA 93105

Sue Nagelmann, Santa Barbara ,CA 93105

Valerie Williams, Santa Barbara ,CA 93105

Alexandra Jamis, Santa Barbara ,CA 93105

Delila Moseley, Santa Barbara ,CA 93105

Cheri Clampett Borda, Santa Barbara ,CA 93105

Amie Herra, Santa Barbara ,CA 93105

Sally Saenger, Santa Barbara ,CA 93105

Matt Murdock, Santa Barbara ,CA 93105

Carol Preston, Santa Barbara ,CA 93105

Sally Hughes, Santa Barbara ,CA 93105

Fiona Stone, Santa Barbara ,CA 93105

Carol Wesolowski, Santa Barbara ,CA 93105

Dana Welch, Santa Barbara ,CA 93105

Julia Laraway, Santa Barbara ,CA 93105

Georgia McDermott, Santa Barbara ,CA 93105

Bonnie Passy, Santa Barbara ,CA 93105

Rachel Brown, Santa Barbara ,CA 93105

Janeen Crandall, Santa Barbara ,CA 93105

Juneal Chenoweth, Santa Barbara ,CA 93105

Margaret Levine, Santa Barbara ,CA 93105

Nina Ward, Santa Barbara ,CA 93105

Stephanie Conliffe, Santa Barbara ,CA 93105

Pamela Westlund, Santa Barbara ,CA 93105

Melissa Hansen, Santa Barbara ,CA 93105

Maeda Palius, Santa Barbara ,CA 93105

Colleen Poulsen, Santa Barbara ,CA 93105

Jill Ireland, Santa Barbara ,CA 93105

Susanne Richards, Santa Barbara ,CA 93105

Marilyn Loperfido, Santa Barbara ,CA 93105

Margaret Crocco, Santa Barbara ,CA 93105

Nicole Lallande, Santa Barbara ,CA 93105

Sally Mcelrath, Santa Barbara ,CA 93105

Sarah Kass, Santa Barbara ,CA 93105

Carla Romero, Santa Barbara ,CA 93105

Beverly A. Jones, Santa Barbara ,CA 93105

Jackie Marston, Santa Barbara ,CA 93105

Jennifer Bensinger, Santa Barbara ,CA 93105

Mari Simpson, Santa Barbara ,CA 93105

Hilda Pizzaro, Santa Barbara ,CA 93105

Caitlin Larsen, Santa Barbara ,CA 93105

Nancy Campagino, Santa Barbara ,CA 93105

Suzanne Fitzgerald, Santa Barbara ,CA 93105

Veronica Rodriguez, Santa Barbara ,CA 93105

Allison Wooten, Santa Barbara ,CA 93105

Becka Doering, Santa Barbara ,CA 93105

Linda White, Carpinteria ,CA 93013

Jayne Diaz, Carpinteria ,CA 93013

Rebecca Ornelas, Carpinteria ,CA 93013

Ruby Vazquez, Carpinteria ,CA 93013

Kathleen Saragosa, Carpinteria ,CA 93013

Susan Mueller, Carpinteria ,CA 93013

Nancy Garibay, Carpinteria ,CA 93013

May Coors, Carpinteria ,CA 93013

Heidi Johnson, Carpinteria ,CA 93013

Jackie Morris, Carpinteria ,CA 93013

Laurie McMahon, Carpinteria ,CA 93013

Marianne Bloom, Carpinteria ,CA 93013

Yvette Angeles, Carpinteria ,CA 93013

Linda Hernandez, Carpinteria ,CA 93013

Kacey Chester, Carpinteria ,CA 93013

Scott Barr, Carpinteria ,CA 93013

Nashia Wachsman, Carpinteria ,CA 93013

Devon Forbes, Carpinteria ,CA 93013

Catherine Nicolaides, Carpinteria ,CA 93013

Alexandra Mahto, Santa Barbara ,CA 93105

David Mazurkiewicz, Santa Barbara ,CA 93105

Brittany Odermann, Santa Barbara ,CA 93105

Anonymous Donor, Santa Barbara ,CA 93105

Shereef Moharram, Santa Barbara ,CA 93105

Tim Menninger, Santa Barbara ,CA 93105

Mark Francavilla, Santa Barbara ,CA 93105

Jewell Coburn, Santa Barbara ,CA 93105

Jeannette Myers, Santa Barbara ,CA 93105

Helissa Blumenthal, Santa Barbara ,CA 93105

Sharon Aurelio, Santa Barbara ,CA 93105

Thuy Jammet, Santa Barbara ,CA 93105

Adrian Usnick, Santa Barbara ,CA 93105

Shawn Duex, Santa Barbara ,CA 93105

Rayanna Cole, Santa Barbara ,CA 93105

Jessica Darke, Santa Barbara ,CA 93105

Stacy Brostrom, Santa Barbara ,CA 93105

Elvi Morris, Santa Barbara ,CA 93105

Robert Bailey, Santa Barbara ,CA 93105

Toby Laur, Santa Barbara ,CA 93105

Hanh Lee, Santa Barbara ,CA 93105

Mike Harrington, Santa Barbara ,CA 93105

Morgan Nix, Santa Barbara ,CA 93105

Maggie Brosnan, Santa Barbara ,CA 93105

Mahala Anderson, Santa Barbara ,CA 93105

Jody Kurlas, Santa Barbara ,CA 93105

Charmien Carrier, Santa Barbara ,CA 93105

Damaris Londono, Santa Barbara ,CA 93105

Anne Rizzoli, Santa Barbara ,CA 93105

Sharon Vargas, Santa Barbara ,CA 93105

Amy Mayhall, Santa Barbara ,CA 93105

J'Nelle Holland, Santa Barbara ,CA 93105

Amannda Rios, Santa Barbara ,CA 93105

Robin St Louis, Santa Barbara ,CA 93105

Aine Phelan, Santa Barbara ,CA 93105

Robin Lyons, Santa Barbara ,CA 93105

Shannon Balram, Santa Barbara ,CA 93105

Marty Rodgers, Santa Barbara ,CA 93105

Kai Fields, Santa Barbara ,CA 93101

Dan Spencer, Santa Barbara ,CA 93101

Heather Ayer, Santa Barbara ,CA 93101

Maria Castro, Santa Barbara ,CA 93101

Conner Deinhard, Santa Barbara ,CA 93101

Lindsay Delp, Santa Barbara ,CA 93101

Jeff Grossman, Santa Barbara ,CA 93101

Brenda Geneau, Santa Barbara ,CA 93101

Sydney Harmon, Santa Barbara ,CA 93101

Cory Vaccaro, Santa Barbara ,CA 93101

Ron Van, Santa Barbara ,CA 93101

Seraphim Albrecht, Santa Barbara ,CA 93101

Robin Rapanut, Santa Barbara ,CA 93101

Angel Sanchez, Santa Barbara ,CA 93101

Kelsey Tinkham, Santa Barbara ,CA 93101

Heaton Armstrong, Santa Barbara ,CA 93101

Rachel Rodriguez, Santa Barbara ,CA 93101

Awadi Rathugamage, Santa Barbara ,CA 93101

Kurt Yalcin, Santa Barbara ,CA 93101

Daniel Johnson, Santa Barbara ,CA 93101

Karen Kimzey, Santa Barbara ,CA 93101

Peter Hall, Santa Barbara ,CA 93101

Tia Yox, Santa Barbara ,CA 93103

Mikyla Cordero, Santa Barbara ,CA 93103

Casey Margaret, Santa Barbara ,CA 93103

Roe White, Santa Barbara ,CA 93103

Miguel Angeles, Santa Barbara ,CA 93103

Daniel Chang, Santa Barbara ,CA 93103

Monse Zarate, Santa Barbara ,CA 93103

Robin Sager, Santa Barbara ,CA 93103

Kent Newton, Santa Barbara ,CA 93103

Jerry Peddicord, Santa Barbara ,CA 93103

Alexis Ireland, Santa Barbara ,CA 93103

Adriane Passani, Santa Barbara ,CA 93103

Vanessa Garcia, Santa Barbara ,CA 93103

Stephen McMillan, Santa Barbara ,CA 93103

Oscar Perez, Santa Barbara ,CA 93103

Michael Meza, Santa Barbara ,CA 93103

Ann-Elise Sudduth, Santa Barbara ,CA 93103

Chris Mc Gibbon, Santa Barbara ,CA 93103

Robin Dierenfield, Santa Barbara ,CA 93103

Sami Siteaman, Santa Barbara ,CA 93103

Andrea Vega, Santa Barbara ,CA 93101

Christian Brown, Santa Barbara ,CA 93101

Ryan Koester, Santa Barbara ,CA 93101

Brandy Moen, Santa Barbara ,CA 93101

Kira Volpi, Santa Barbara ,CA 93101

Anna Acuna, Santa Barbara ,CA 93101

Matt Nordin, Santa Barbara ,CA 93101

Paul Broeker, Santa Barbara ,CA 93101

Takero Shinoda, Santa Barbara ,CA 93101

Ruben Vazquez, Santa Barbara ,CA 93101

Sarah Aleridge, Santa Barbara ,CA 93101

Taylor Lisella, Santa Barbara ,CA 93101

Bailey Harrison, Santa Barbara ,CA 93101

Bree Tate, Santa Barbara ,CA 93101

Prasanna Baskaran, Santa Barbara ,CA 93101

Sarah Hughes, Santa Barbara ,CA 93101

Soren Molina, Santa Barbara ,CA 93101

Jill Palmer, Santa Barbara ,CA 93101

Arthur Elizondo, Santa Barbara ,CA 93101

Kainoa Spencer, Santa Barbara ,CA 93101

Roberto Estrada, Santa Barbara ,CA 93101

Roxann Dikeman, Santa Barbara ,CA 93101

Myah Mashhadialireza, Santa Barbara ,CA 93101

Terease Chin, Santa Barbara ,CA 93101

Anabella Lehne, Santa Barbara ,CA 93101

Nick Pascal, Santa Barbara ,CA 93101

Kelly Uyesaka, Santa Barbara ,CA 93101

Ron Herron, Santa Barbara ,CA 93101

Mario Elias, Santa Barbara ,CA 93101

Leslie Ekker, Santa Barbara ,CA 93101

William Becker, Santa Barbara ,CA 93101

Sean Flaherty, Santa Barbara ,CA 93101

Evan Lewis, Santa Barbara ,CA 93101

Marty Acree, Santa Barbara ,CA 93101

Skye Boucaut, Santa Barbara ,CA 93101

Caneron Rosario, Santa Barbara ,CA 93101

Dave Cunningham, Santa Barbara ,CA 93101

Jackson Myers, Santa Barbara ,CA 93101

Sonia Castro, Santa Barbara ,CA 93101

Harold Sleiman, Santa Barbara ,CA 93101

Erica Boardman, Santa Barbara ,CA 93101

Shannon Burke, Santa Barbara ,CA 93101

Theekshi Rathugamage, Santa Barbara ,CA 93101

Kurt Charron, Santa Barbara ,CA 93101

Brittany Haman, Santa Barbara ,CA 93101

Idania Bences, Santa Barbara ,CA 93101

Ashtyn Skalicky, Santa Barbara ,CA 93101

Carrie Clark, Santa Barbara ,CA 93101

Cory Jones, Santa Barbara ,CA 93101

Jessica Schlobohm Keane, Santa Barbara ,CA 93101

Emeralda Garcia, Santa Barbara ,CA 93101

Sara Donnen, Santa Barbara ,CA 93101

Eric Joerger, Santa Barbara ,CA 93101

Alexander Munoz, Santa Barbara ,CA 93101

Ian Bisellach, Santa Barbara ,CA 93101

Tarek Alyusuf, Santa Barbara ,CA 93101

Kayleigh Lauzon, Santa Barbara ,CA 93101

Dario Blancarte, Santa Barbara ,CA 93101

Cindy Van Mols, Santa Barbara ,CA 93101

Manoah Piper, Santa Barbara ,CA 93101

Amy Phillips, Santa Barbara ,CA 93101

John Switack, Santa Barbara ,CA 93101

Josefina Soleto, Santa Barbara ,CA 93101

Leslie Catalan, Santa Barbara ,CA 93101

Shahla Khodarahm, Goleta ,CA 93117

Anonymous Donor, Goleta ,CA 93117

Victoriano Romo, Goleta ,CA 93117

Kyle Shanebeck, Goleta ,CA 93117

Dee Anne Weyel, Goleta ,CA 93117

Anonymous Donor, Goleta ,CA 93117

Noelle Foster, Goleta ,CA 93117

Jaymee Rangel, Goleta ,CA 93117

Jeffrey Carmichael, Goleta ,CA 93117

John Spann, Goleta ,CA 93117

Patricia Guerrero, Goleta ,CA 93117

Maristela Penteriche, Goleta ,CA 93117

Jason Reimhold, Goleta ,CA 93117

Angela Tripp, Goleta ,CA 93117

Annika Okamoto, Goleta ,CA 93117

Danen Carlson, Goleta ,CA 93117

Cydney Miller, Goleta ,CA 93117

Adrian Botello, Goleta ,CA 93117

Irma Acampo, Goleta ,CA 93117

Pillo Salcedo, Santa Barbara ,CA 93117

Shithi Kamal-Heikman, Goleta ,CA 93117

Charu Chaubal, Goleta ,CA 93117

Steve Thompson, Goleta ,CA 93117

Shilo Tucker, Goleta ,CA 93117

Alexis Dorny, Goleta ,CA 93117

Robyn Smith, Goleta ,CA 93117

Zi Nguyen, Goleta ,CA 93117

Matt Cirincione, Goleta ,CA 93117

Jesus Villafranco Perez, Goleta ,CA 93117

Albert Huerta, Goleta ,CA 93117

Tommie Romeo, Goleta ,CA 93117

Stacy Yansen, Goleta ,CA 93117

Jason Montegue, Goleta ,CA 93117

Hani Abughazaleh, Goleta ,CA 93117

Kelly Mendesh, Goleta ,CA 93117

Mercedes Murphy, Goleta ,CA 93117

Yuefeng Ge, Goleta ,CA 93117

Melanie Sanjuan, Goleta ,CA 93117

Blake Canas, Goleta ,CA 93117

Deborah Kircher, Goleta ,CA 93117

Giana Tipton, Goleta ,CA 93117

Guilia Brofferio, Goleta ,CA 93117

Juana Valladarez, Goleta ,CA 93117

Shawn Warner, Goleta ,CA 93117

Rachel Jutkowitz, Goleta ,CA 93117

Stephen M., Goleta ,CA 93117

Jim Bartlett, Goleta ,CA 93117

Alisha Dally, Goleta ,CA 93117

Mason Miller, Goleta ,CA 93117

Karen Edwards, Goleta ,CA 93117

Ben Kersh, Goleta ,CA 93117

Shalabh Kapoor, Goleta ,CA 93117

Diana Kotowski, Goleta ,CA 93117

Don Slutzky, Goleta ,CA 93117

Kim Wendel, Goleta ,CA 93117

Natalia Rodriguez, Goleta ,CA 93117

Richard Yee, Goleta ,CA 93117

Camerina Nungaray, Goleta ,CA 93117

Sarah Hearon, Santa Barbara ,CA 93130

Ever Rios, Santa Barbara ,CA 93101

Adam Zarrin, Santa Barbara ,CA 93101

Connor Worden, Santa Barbara ,CA 93101

Jackie Demoor, Santa Barbara ,CA 93101

Adam Ernster, Santa Barbara ,CA 93101

Kelly L, Santa Barbara ,CA 93111

Olav Hallberg, Santa Barbara ,CA 93111

Adrian Peyrat, Santa Barbara ,CA 93111

Tom Saulsbury, Santa Barbara ,CA 93111

Jean Clarke, Santa Barbara ,CA 93111

Brent Anderson, Santa Barbara ,CA 93111

Blaine Sutton, Santa Barbara ,CA 93111

Patricia Smithson, Santa Barbara ,CA 93111

Vanessa Bolden, Santa Barbara ,CA 93111

Sadie Marton, Santa Barbara ,CA 93111

Tianyu Li, Santa Barbara ,CA 93111

Will G, Santa Barbara ,CA 93111

Max Backster, Santa Barbara ,CA 93111

Aidan Last, Santa Barbara ,CA 93111

Yael Lacommare, Santa Barbara ,CA 93111

David Andrade Sr, Santa Barbara ,CA 93111

Jessica Poley, Santa Barbara ,CA 93111

Gideon Farhadian, Santa Barbara ,CA 93111

Tricia Peters, Santa Barbara ,CA 93111

R M Mallen, Santa Barbara ,CA 93111

Robert Ruth, Santa Barbara ,CA 93111

Carlos Valenzuela, Santa Barbara ,CA 93111

Somnath Bank, Santa Barbara ,CA 93111

Trey Driscoll, Santa Barbara ,CA 93111

Devon Cetti, Santa Barbara ,CA 93111

Allisha Smith, Santa Barbara ,CA 93111

Michael Katz, Santa Barbara ,CA 93111

Connor Krippendorf, Santa Barbara ,CA 93111

Gayle Lofthus, Santa Barbara ,CA 93111

Arran DeArmond, Santa Barbara ,CA 93111

Nina Moore, Santa Barbara ,CA 93111

Kachina Heik, Santa Barbara ,CA 93111

Abigael Orozco, Santa Barbara ,CA 93111

Emily May, Santa Barbara ,CA 93111

Anonymous Donor, Santa Barbara ,CA 93111

Jan Traphagen, Santa Barbara ,CA 93111

Joy Lee, Santa Barbara ,CA 93111

Bryan Hergenroether, Santa Barbara ,CA 93111

Scott Rowland, Santa Barbara ,CA 93111

Robin Drew, Santa Barbara ,CA 93111

Isabel Thruston, Santa Barbara ,CA 93111

Joe Roderick, Santa Barbara ,CA 93111

Kelsey Larson, Santa Barbara ,CA 93111

Merrilyn Damitz, Santa Barbara ,CA 93111

Jennifer Slayerman, Santa Barbara ,CA 93111

Robert McAnarney, Santa Barbara ,CA 93111

Linda Willson, Goleta ,CA 93117

John Martin, Goleta ,CA 93117

Canxun Zhang, Goleta ,CA 93117

Luke Sherman, Goleta ,CA 93117

Amalia Narofsky, Goleta ,CA 93117
Zeina Ellis-Worth, Goleta ,CA 93117
Heidi Flowers, Goleta ,CA 93117
Jacqueline Englar, Goleta ,CA 93117
Nikolaus Volgenau, Goleta ,CA 93117
Jazzmyn Dally, Goleta ,CA 93117
Alexander Bimden, Goleta ,CA 93117
Felip Quezada, Goleta ,CA 93117
Devin Ross, Goleta ,CA 93117
Jess Mendoza, Goleta ,CA 93117
Masachika Sato, Goleta ,CA 93117
Josilin Rojas, Goleta ,CA 93117
Adrianna Carlos, Goleta ,CA 93117
Nona Portnoy, Goleta ,CA 93117
Tim Houston, Santa Barbara ,CA 93109
Don Roberts, Santa Barbara ,CA 93109
Matt Jonsson, Santa Barbara ,CA 93109
Lynn Lyon, Santa Barbara ,CA 93109
Michelle Duran, Santa Barbara ,CA 93109

Trudy Gregson, Santa Barbara ,CA 93109

Shireen Faizullahoy, Santa Barbara ,CA 93109
Nica Guinn, Santa Barbara ,CA 93109

Jason Valdez, Santa Barbara ,CA 93109
Nate Wagner, Santa Barbara ,CA 93109
Gayle Nagy, Santa Barbara ,CA 93109
Vicky Blum, Santa Barbara ,CA 93109
Austin Sharon, Santa Barbara ,CA 93109

Tania Velasquez, Santa Barbara ,CA 93110

Jessie Su, Santa Barbara ,CA 93110
Peggy Faulk, Santa Barbara ,CA 93110
Hilary Quinn, Santa Barbara ,CA 93110
Stacey Garcia, Santa Barbara ,CA 93110

Chris Dunsmore, Santa Barbara ,CA 93110

Decker Brandts, Santa Barbara ,CA 93110

Bo Liao, Santa Barbara ,CA 93110
Elizabeth Huerta, Santa Barbara ,CA 93110

Emily Gumperz, Santa Barbara ,CA 93110

Kathleen O'Brien, Santa Barbara ,CA 93110

Marco Castillo, Santa Barbara ,CA 93110

Kim Brondum, Santa Barbara ,CA 93110

Lindsay Heinonen, Santa Barbara ,CA 93110

Patrick Lamberts, Santa Barbara ,CA 93110

Nishant Dhawan, Santa Barbara ,CA 93110

Juliet Ho, Santa Barbara ,CA 93110

Kelly McGovern, Santa Barbara ,CA 93110

Vandana Khare, Santa Barbara ,CA 93110

Betsy Burns, Santa Barbara ,CA 93110

Ethan Czuppa, Santa Barbara ,CA 93110

Billy Spencer, Santa Barbara ,CA 93110

Lou Richards, Santa Barbara ,CA 93110

Josh May, Santa Barbara ,CA 93110

Michael Bates, Santa Barbara ,CA 93110

Jacob Salas, Santa Barbara ,CA 93111

Kristin Smith, Santa Barbara ,CA 93111

Lang Lam, Santa Barbara ,CA 93111

Fred Calleri, Santa Barbara ,CA 93111

Lean Mead, Santa Barbara ,CA 93111

Jacob Medina, Santa Barbara ,CA 93111

Sadie Marton, Santa Barbara ,CA 93111

Jiang Hu, Santa Barbara ,CA 93111

Wendy Kaufmann, Santa Barbara ,CA 93111

Chail Norton, Santa Barbara ,CA 93111

Dorsey Jordan, Santa Barbara ,CA 93111

Geoff Haywood, Santa Barbara ,CA 93111

Dani Otis, Santa Barbara ,CA 93111

Shadean Runyen, Santa Barbara ,CA 93111

Hailey Duncan, Santa Barbara ,CA 93111

Robbie Rodriguez, Santa Barbara ,CA 93111

Aidan Calkins, Santa Barbara ,CA 93111

Jennifer Archer, Santa Barbara ,CA 93111

Lane Goodkind, Santa Barbara ,CA 93111

Josephine Gonzalez, Santa Barbara ,CA 93111

Elizabeth-Anne Oscanlon, Santa Barbara ,CA 93111

Kara Now, Santa Barbara ,CA 93111

Jerilynne Nibbe, Santa Barbara ,CA 93111

Rheanna Salvador, Santa Barbara ,CA 93111

Ana Melgoza, Santa Barbara ,CA 93111

Chris Rodriguez, Santa Barbara ,CA 93111

Chloe Babcock, Santa Barbara ,CA 93108

Tony Wall, Santa Barbara ,CA 93109

Delaney Patrick, Santa Barbara ,CA 93109

John Cunningham, Santa Barbara ,CA 93109

Christiane Poblentz, Santa Barbara ,CA 93109

Douglas McNeel, Santa Barbara ,CA 93109

Beth Brockman, Santa Barbara ,CA 93109

Kelly Dean, Santa Barbara ,CA 93109

Nieko Bleskuer, Santa Barbara ,CA 93109

Michelle Sharpe, Santa Barbara ,CA 93109

Rick Hummel, Santa Barbara ,CA 93109

Marina Ratliff, Santa Barbara ,CA 93109

Gary Bruemmer, Santa Barbara ,CA 93109

Bo Beaver, Santa Barbara ,CA 93109

Meredith Jacobsen, Santa Barbara ,CA 93109

Assembly District 38

Barbara Duncan, Ventura ,CA 93006

Lisa Allen, Ventura ,CA 93003

Jan Langer, Ventura ,CA 93001

Jon Ostrin, Ventura ,CA 93003

Gerald Gray, Ventura ,CA 93003

David Myers, Ventura ,CA 93003

John Peterson, Ventura ,CA 93003

John Johnson, Ventura ,CA 93003

Richard Chapek, Ventura ,CA 93003

Rein Perryman, Ventura ,CA 93003

Jack Connella, Ventura ,CA 93003

Joseph Dodge, Ventura ,CA 93003

William Lawyer, Ventura ,CA 93003

Juan Cortez, Ventura ,CA 93003

Jolene Benedik, Ventura ,CA 93003

Gregory Spaulding, Ventura ,CA 93003

Gary Laub, Ventura ,CA 93003

Scott Manninen, Ventura ,CA 93003

Richard Huff, Ventura ,CA 93003

Donn Browne, Ventura ,CA 93003

Jim Harvey, Ventura ,CA 93003

Tom Trumble, Ventura ,CA 93003

Spencer Westbrook, Ventura ,CA 93003

John Siman, Ventura ,CA 93003

Gregg Wagner, Ventura ,CA 93003

Ed Lay, Ventura ,CA 93003

LaVern Hoffman, Ventura ,CA 93003

Sam Tello, Ventura ,CA 93003

Christopher Duran, Ventura ,CA 93003

Geoffrey Parker, Ventura ,CA 93003

Rick Morton, Ventura ,CA 93003

Jason Curran, Ventura ,CA 93003

Patrick Zarate, Ventura ,CA 93003

Scott Jones, Ventura ,CA 93003

Michael Hager, Ventura ,CA 93003

Jeffrey Langille, Ventura ,CA 93003

Robert Garrett, Ventura ,CA 93003

William Tokar, Ventura ,CA 93003

Nick Falcone, Ventura ,CA 93003

Todd Copeland, Ventura ,CA 93003

Ryan Moses, Ventura ,CA 93003

Brandon Heikes, Ventura ,CA 93003

Robert Davidson, Ventura ,CA 93003

Brian Greenaway, Ventura ,CA 93003

Mark Porras, Ventura ,CA 93003

Fred Weiner, Ventura ,CA 93003

Turner Clark, Ventura ,CA 93003

Jeff Loudermilk, Ventura ,CA 93003

Jonah Dalton, Ventura ,CA 93003

Jim Sindelar, Ventura ,CA 93003

Stephen La Turner, Ventura ,CA 93003

Thomas Bertolino, Ventura ,CA 93003

Eric Reed, Ventura ,CA 93003

Robert Warnagieris, Ventura ,CA 93003

Carl Tindle, Ventura ,CA 93003

Steven Ellberg, Ventura ,CA 93003

Don Woodstock, Ventura ,CA 93003

Vincent Melamed, Ventura ,CA 93003

Robert Holaway, Ventura ,CA 93003

William Schneider, Ventura ,CA 93003

Daniel Patton, Ventura ,CA 93003

Mike Dejong, Ventura ,CA 93003

Mike Gainer, Ventura ,CA 93003

Howard Miller, Ventura ,CA 93003

Edward Paul, Ventura ,CA 93003

Curt Montague, Ventura ,CA 93003

Don Wood, Ventura ,CA 93003

Lee Burns, Ojai ,CA 93023

Samuel Bean, Ojai ,CA 93023

Michael Taylor, Ojai ,CA 93023

Jonathan Lambert, Ojai ,CA 93023

Paul Rodriguez, Ojai ,CA 93023

Matthew Paprocki, Ojai ,CA 93023

Ronald Romero, Ojai ,CA 93023

Steven Seligman, Ojai ,CA 93023

Jess Ramirez, Ojai ,CA 93023

Eric White, Ojai ,CA 93023

Kim Bryson, Ojai ,CA 93023

Evan Austin, Ojai ,CA 93023

James McCarthy, Ojai ,CA 93023

Dave Gaddis, Ojai ,CA 93023

Gregory Golden, Ojai ,CA 93023

Stuart Lennox, Ojai ,CA 93023

Mark Sinclair, Ojai ,CA 93023

Nick Egan, Ojai ,CA 93023

Paul Angelo, Ventura ,CA 93001

Samuel Furmanski, Ventura ,CA 93001

Chuck Schonder, Ventura ,CA 93001

Paul Schonauer, Ventura ,CA 93001

Curtis Sams, Ventura ,CA 93001

David Wohlstadter, Ventura ,CA 93001

Todd Lemein, Ventura ,CA 93001

Lawrence Hecox, Ventura ,CA 93001

Eduardo Trujillo, Ventura ,CA 93001

Manuel Robles, Ventura ,CA 93001

Michael Stewart, Ventura ,CA 93001

Matthew Clark, Ventura ,CA 93001

Michael Flett, Ventura ,CA 93001

James Ogrady, Ventura ,CA 93001

Joseph Amos, Ventura ,CA 93001

John Cotsis, Ventura ,CA 93001

Kevin Caffee, Ventura ,CA 93001

Kent Schmidt, Ventura ,CA 93001

Dick Birney, Ventura ,CA 93001

Stephen Ehret, Ventura ,CA 93001

William Elliot, Ventura ,CA 93001

Joseph Taylor, Ventura ,CA 93001

Robert Dunlap, Ventura ,CA 93001

Nash Rightmer, Ventura ,CA 93001

Ralph Brand, Ventura ,CA 93001

William Faulkner, Ventura ,CA 93001

Ryan Sheldon, Ventura ,CA 93001

Dan Musick, Ventura ,CA 93001

Lawrence Neufeld, Ventura ,CA 93001

Bruce Goldenson, Ventura ,CA 93001

Neel Debone, Ventura ,CA 93001

Dennis Heitmann, Ventura ,CA 93001

Isabelle Harris, Ventura ,CA 93001

Holly Carter, Ventura ,CA 93001

Gina Dean, Ventura ,CA 93001

Kira Friedman, Ventura ,CA 93001

Kimberly Custer, Ventura ,CA 93001

Judith Kelly, Ventura ,CA 93001

Rachel Szatkowski, Ventura ,CA 93001

Kathy Stoddard, Ventura ,CA 93001

Diane Shields, Ventura ,CA 93001

Jill Santos, Ventura ,CA 93001

Siri Feeney, Ventura ,CA 93001

Meridith Thompson, Ventura ,CA 93001

Patricia Liggett, Ventura ,CA 93001

Danielle Brown, Ventura ,CA 93001

Wendy Steiger, Ventura ,CA 93001

Lisa Whitesell, Ventura ,CA 93001

Meredith Newcom, Ventura ,CA 93001

Dena Mercer, Ventura ,CA 93001

Nora Feavel, Ventura ,CA 93001

Connie Bennet, Ventura ,CA 93001

Alena Chauhan, Ventura ,CA 93001

Nan Durantini, Ventura ,CA 93001

Cathy Kriegstein, Ventura ,CA 93001

Denise Melendez, Ventura ,CA 93001

Erin Hansen, Ventura ,CA 93001

Gail Hodgson, Ventura ,CA 93001

Alicia Carman, Ventura ,CA 93001

Katie Bucey, Ventura ,CA 93001

Karen Socher, Ventura ,CA 93001

Margaret McCollum, Ventura ,CA 93001

Rachel Ulrich, Ventura ,CA 93001

Jana Bellan, Ventura ,CA 93001

Maureen Tunney, Ventura ,CA 93001

Angeline Weber, Ventura ,CA 93001

Charlotte Rossler, Ventura ,CA 93001

Cindy Piester, Ventura ,CA 93001

Kathleen Brooks, Ventura ,CA 93001

Grace Emery Brandt, Ventura ,CA 93001

Sharon Toscano, Ventura ,CA 93001

Teresa Monzon, Ventura ,CA 93001

Cindy Hoffman, Ventura ,CA 93001
Tawny Stockton, Ventura ,CA 93001
Carol Davis, Ventura ,CA 93001
Debbie Ingold, Ventura ,CA 93001
Appolina Osborne, Ventura ,CA 93001
Patricia Caloia, Ventura ,CA 93001
Karin Hansen-McManus, Ventura ,CA 93001

Rebecca Hinojosa, Ventura ,CA 93001
Kaycee Wysaski, Ventura ,CA 93001
Diane Dowler, Ventura ,CA 93001
Amelia Gonzalez, Ventura ,CA 93001
Julienne Horne, Ventura ,CA 93001
Angie Williams, Ventura ,CA 93001
Tamara Varney, Ventura ,CA 93001
Tara Schnell, Ventura ,CA 93001
Joanna Dominguez, Ventura ,CA 93001
Berta Bray, Ventura ,CA 93001
Carolyn Gleisberg, Ventura ,CA 93001
Barbara Danluck, Ventura ,CA 93001
Denise Djemal, Ventura ,CA 93001
Jeanne Benitez, Ventura ,CA 93001
Sally Herman, Ventura ,CA 93001
Annette Klaus, Ventura ,CA 93001

Teresa Jayne, Ojai ,CA 93023
Jaime DeMoss, Ojai ,CA 93023
Jane Williamson, Ojai ,CA 93023
Wendy Bonvechio, Ojai ,CA 93023
Brenda Brennan, Ojai ,CA 93023
Jessica Martinez, Ojai ,CA 93023
Elizabeth Zweig, Ojai ,CA 93023
Deborah Woodall, Ojai ,CA 93023
Pam Magill, Ojai ,CA 93023
Sue Williamson, Ojai ,CA 93023
Mary Nelson, Ojai ,CA 93023
Carol Goehausen, Ojai ,CA 93023
Vinenne Mordy, Ojai ,CA 93023
Pauline Petchey, Ojai ,CA 93023
Shelley Cornish, Ojai ,CA 93023
Linda Higbee, Ojai ,CA 93023
Shellie Coolce, Ojai ,CA 93023
Claire Azzam, Ojai ,CA 93023
Julia Alcocer, Ojai ,CA 93023
Virginia Parke, Ojai ,CA 93023
Debbie Lambertson, Ojai ,CA 93023
Sharon Lum, Ojai ,CA 93023
Betsy Stix, Ojai ,CA 93023

Jennifer Moses, Ojai ,CA 93023
Helen Orthuber, Ojai ,CA 93023
Juliet Caulfield, Ojai ,CA 93023
Piper Sellers, Ojai ,CA 93023
Joanne Butler, Ojai ,CA 93023
Joan Welborn, Ojai ,CA 93023
Fatima Zaidi, Ojai ,CA 93023
Victoria Clause, Ojai ,CA 93023
Melinda Meeks, Ojai ,CA 93023
Laurie Johnson, Ojai ,CA 93023
Heather McDougale, Ojai ,CA 93023
Erin Looker, Ojai ,CA 93023
Kristin Dodge, Ojai ,CA 93023
Beverly Davidson, Ojai ,CA 93023
Vicki Etchart, Ojai ,CA 93023
Celine Moomey, Ojai ,CA 93023
Michelle Smith, Ojai ,CA 93023
Sharon Thomas, Ojai ,CA 93023
Holly Irwin, Ojai ,CA 93023
Carol Houck, Ojai ,CA 93023
Alicia Morales, Ventura ,CA 93003
Carolyn Groves, Ventura ,CA 93003
Cynthia Duncan, Ventura ,CA 93003

Lori Sayles, Ventura ,CA 93003
Amy Bruns, Ventura ,CA 93003
Susie Vanderkooji, Ventura ,CA 93003
Louise Bretz, Ventura ,CA 93003
Michael Israel, Ventura ,CA 93003
Deborah Cromwell, Ventura ,CA 93003
Heather Hall, Ventura ,CA 93003
Valerie Bulthuis-Zeko, Ventura ,CA 93003

Colleen Shields, Ventura ,CA 93003
Kay Zetlmair, Ventura ,CA 93003
Julianne Pena, Ventura ,CA 93003
Elizabeth Simpson, Ventura ,CA 93003
Linda Stapleton, Ventura ,CA 93003
Suellen Ortega, Ventura ,CA 93003
Lynn Ann Sharp, Ventura ,CA 93003
Kathleen Berg, Ventura ,CA 93003
Mariah Riffel, Ventura ,CA 93003
Deena Pace, Ventura ,CA 93003
Lynda Vanbrunt, Ventura ,CA 93003
Lisa Martinez, Ventura ,CA 93003
Tina Comden, Ventura ,CA 93003
Nan Waltman, Ventura ,CA 93003
Sherry Clover, Ventura ,CA 93003

Cathy Peet, Ventura ,CA 93003

Jennifer Johnson, Ventura ,CA 93003

Gail Dennison, Ventura ,CA 93003

Ethel Escobar, Ventura ,CA 93003

Rebekah Nagel, Ventura ,CA 93003

Joanna Umali, Ventura ,CA 93003

Joni Kusnierz, Ventura ,CA 93003

Dianne Lamprecht, Ventura ,CA 93003

Sylvia Bowers, Ventura ,CA 93003

Elizabeth Lopez, Ventura ,CA 93003

Trisha McClanroch, Ventura ,CA 93003

Dora Torres, Ventura ,CA 93003

Heather Imgrund, Ventura ,CA 93003

Diane Cowles, Ventura ,CA 93003

Anna Moraga, Ventura ,CA 93003

Kathy Stroup, Ventura ,CA 93003

Allison Pagano, Ventura ,CA 93003

Rachel Enevoldsen, Ventura ,CA 93003

Linda Martin, Ventura ,CA 93003

Pamela Leonard, Ventura ,CA 93003

Kimberly Ledesma, Ventura ,CA 93003

Jennifer Brace, Ventura ,CA 93003

Ines Gonzalez, Ventura ,CA 93003

Fe Mae, Ventura ,CA 93003

Susan Schulfer, Ventura ,CA 93003

Karen McWorter, Ventura ,CA 93003

Erin Fraser, Ventura ,CA 93003

Della Work, Ventura ,CA 93003

Vanessa Diaz, Ventura ,CA 93003

Victoria Sajonia, Ventura ,CA 93003

Shelley Cassulo, Ventura ,CA 93003

Sydney Harris, Ventura ,CA 93003

Alma Smith, Ventura ,CA 93003

Robyn Cromie, Ventura ,CA 93003

Anna Soberanis, Ventura ,CA 93003

Karen Davidson, Ventura ,CA 93003

Jo Bowers, Ventura ,CA 93003

Carolyn Borchard, Ventura ,CA 93003

Gabrielle Moes, Ventura ,CA 93003

Kellie Love, Ventura ,CA 93003

Deborah Dawson, Ventura ,CA 93003

Laurel Schwartzkopf, Ventura ,CA 93003

Nancy Talley, Ventura ,CA 93003

Katy Montecino, Ventura ,CA 93003

Karen Sullivan, Ventura ,CA 93003

Marlene Frabasilio, Ventura ,CA 93003

Kathy Julian, Ventura ,CA 93003
Michelle Azimov, Ventura ,CA 93003
Kathryn Murillo, Ventura ,CA 93003
Lois Mccampbell, Ventura ,CA 93003
Christina Sisk, Ventura ,CA 93003
Holly Coggins, Ventura ,CA 93003
Rocio Zaragoza, Ventura ,CA 93003
Angelique Mahan, Ventura ,CA 93003
Janice McDonald, Ventura ,CA 93003
Kathleen Good, Ventura ,CA 93003
Elizabeth Rossbacher, Ventura ,CA 93003

Janis McCann, Ventura ,CA 93003
Heather Casanave, Ventura ,CA 93003
Judy Scott, Ventura ,CA 93003
Wendy Ullrich, Ventura ,CA 93003
Kate Ramos, Ventura ,CA 93003
Christine Oneill, Ventura ,CA 93003
Kate Larsen, Ventura ,CA 93003
Kylee Autotte, Ventura ,CA 93003
Rory Locke, Ventura ,CA 93003
Mark Kirwin, Ventura ,CA 93003
Adrian Lopez, Ventura ,CA 93003
Dylan Freeman, Ventura ,CA 93003

Lorraine Lory, Ventura ,CA 93003
Franklin Dichter, Ventura ,CA 93003
Fiorella Grava, Ventura ,CA 93003
Andres Moraza, Ventura ,CA 93003
Melisa Chamberlain, Ventura ,CA 93003
Kay Probasco, Ventura ,CA 93003
Victor Ugarte, Ventura ,CA 93003
Alphie Siekiel-Zdzienicki, Ventura ,CA 93003

Henry Reily, Ventura ,CA 93003
Anaphe Chimarusti, Ventura ,CA 93003
Pamela Taylor, Ventura ,CA 93003
Brooke Shindelus, Ventura ,CA 93003
Mary Rae, Ventura ,CA 93003
Ernest Dragan, Ventura ,CA 93003
Len Edward Burge, Ventura ,CA 93003
Jimmy Young, Ventura ,CA 93003
Arianna Freeman, Ventura ,CA 93003
Grey Maple, Ventura ,CA 93003
Keegan Cole, Ventura ,CA 93003
Peter Sanchez, Ventura ,CA 93003
Benjamin Wilson, Ventura ,CA 93003
Hayley Smith, Ventura ,CA 93003
Baliey Estrada, Ventura ,CA 93003

Vonise Friedman, Ventura ,CA 93003
Anonymous Donor, Ventura ,CA 93003
Payam Minoofar, Ventura ,CA 93003
Elided Trujillo, Ventura ,CA 93003
Daniel Deblase, Ventura ,CA 93003
Marion Holzwarth, Ventura ,CA 93003
Dana Armstrong, Ventura ,CA 93003
Michelle Rosenblum, Ventura ,CA 93003

Maiya Mclean, Ventura ,CA 93003
Maria Tejeda, Ventura ,CA 93003
Carl Rhoads, Ventura ,CA 93003
Aubrey Jacobs, Ojai ,CA 93023
Zayra Lopez, Ojai ,CA 93023
Michal Mitchell, Ojai ,CA 93023
Sydney Robertson, Ojai ,CA 93023
Oceane Mccord, Ojai ,CA 93023
Nichia Huxtable, Ojai ,CA 93023
Toni Nicholson, Ojai ,CA 93023
Dana Thompson, Ojai ,CA 93023
Kim Rapholz, Ojai ,CA 93023
Myrym Slosberg, Ojai ,CA 93023
Stephen Ehret, Ventura ,CA 93001
Micheal Sheilds, Ventura ,CA 93001

Marie-Lynne Gleeson, Ventura ,CA 93001

Kenneth Pennington, Ventura ,CA 93001

Matt Alan, Ventura ,CA 93001
Jessie MacLeod, Ventura ,CA 93001
Cathy Kreigstein, Ventura ,CA 93001
Tina Broccoli, Ventura ,CA 93001
Torane Phelps, Ventura ,CA 93001
Casey Jeon, Ventura ,CA 93001
Anonymous Donor, Ventura ,CA 93001
George Wickham, Ventura ,CA 93001
Azura Naubuen, Ventura ,CA 93001
Christian Morris, Ventura ,CA 93001
Jamie Hartley, Ventura ,CA 93001
Ulises Salgado, Ventura ,CA 93001
Lee Gotwals, Ventura ,CA 93001
Lynn Romero, Ventura ,CA 93001
Maura O'Connor, Ventura ,CA 93001
Courtney Yuan, Ventura ,CA 93001
Sarah Hodson, Ventura ,CA 93001
Madeline Frey, Ventura ,CA 93001
Robert Hunter, Ventura ,CA 93001
Amanda Holte, Ventura ,CA 93001

Noah Wholden Thomas, Ventura ,CA 93001

George Good, Ventura ,CA 93001

Baby Grace, Ventura ,CA 93001

Lily Cook, Ventura ,CA 93001

Nissa Gay, Ventura ,CA 93001

Ronnie Meyers, Ventura ,CA 93001

Fleeta Bair, Ventura ,CA 93001

Shannon Prentice, Ventura ,CA 93001

Fern Rose, Ventura ,CA 93001

Jerry Beckwith, Ventura ,CA 93001

Kim Fairchild, Ventura ,CA 93001

Denia Garfias, Ventura ,CA 93001

Margaret Adcock, Ventura ,CA 93001

Assembly District 42

Andrew Grove, Pacific Palisades ,CA 90272

Dale Kiefer, Pacific Palisades ,CA 90272

Peter Greenwald, Pacific Palisades ,CA 90272

Mark Seymour, Leverett ,MA 1054

Jordan Harris, Pacific Palisades ,CA 90272

Christopher Dunn, Pacific Palisades ,CA 90272

Judith Freed, Pacific Palisades ,CA 90272

Diana Gould, Pacific Palisades ,CA 90272

Bernice Bell, Pacific Palisades ,CA 90272

Charlene Lawrence, Pacific Palisades ,CA 90272

Tanya Evtuhov, Pacific Palisades ,CA 90272

Jennifer McGaughey, Pacific Palisades ,CA 90272

Naomi Saucier, Pacific Palisades ,CA 90272

Kavita Srinivasan, Pacific Palisades ,CA 90272

Assembly District 46

Ron Arnold, Woodland Hills ,CA 91364

Jon Auchterlonie, Woodland Hills ,CA 91364

Kurt Alexander, Woodland Hills ,CA 91364

Joseph La Barbera, Woodland Hills ,CA 91364

Jim Doherty, Woodland Hills ,CA 91364

Gene Kovelman, Woodland Hills ,CA 91364

Thomas McGah, Woodland Hills ,CA 91364

Helen McBride, Woodland Hills ,CA 91364

Madeline Taylor, Woodland Hills ,CA 91364

Mary Killmond, Woodland Hills ,CA 91364

Carol Godsey, Woodland Hills ,CA 91364

Eloise Porter, Woodland Hills ,CA 91364

Jessica Ballard, Woodland Hills ,CA 91364

Linda De Witt, Woodland Hills ,CA 91364

Laura Letchinger, Woodland Hills ,CA 91364

Rhonda Plank-Richard, Woodland Hills ,CA 91364

Iryna Karsanova, Woodland Hls ,CA 91364

Ed Lucks, Woodland Hills ,CA 91364

Assembly District 51

Bruce Rothschild, Santa Monica ,CA 90405

Doug Thomas, Santa Monica ,CA 90405

Matthew Peterson, Santa Monica ,CA 90405

Mike Waterhouse, Santa Monica ,CA 90405

Matt Perry, Santa Monica ,CA 90405

Hal Bogotch, Santa Monica ,CA 90405

Paul Salvo, Santa Monica ,CA 90405

Dorothy Chapman, Santa Monica ,CA 90405

Darlene Vogel, Santa Monica ,CA 90405

Betty Darlins, Santa Monica ,CA 90405

Laurel Joe, Santa Monica ,CA 90405

Kimberly Nieto, Santa Monica ,CA 90405

Elizabeth Ostrom, Santa Monica ,CA 90405

Margo Abbott, Santa Monica ,CA 90405

Daniel Ramirez, Santa Monica ,CA 90405

Casey Wilson, Santa Monica ,CA 90405

Andre Bruno, Santa Monica ,CA 90405

Matthew Bach-Lombardo, Santa Monica ,CA 90405

Assembly District 52

Jason Silver, Los Angeles ,CA 90026

Harvey Lane, Los Angeles ,CA 90026

Joe Geraci, Los Angeles ,CA 90026

Paul Dye, Los Angeles ,CA 90027

James Dillon, Los Angeles ,CA 90027

Steve Hanna, Los Angeles ,CA 90027
Gary Kaplan, Los Angeles ,CA 90027
Tyler Savage, Los Angeles ,CA 90027
Chelsea Bell, Los Angeles ,CA 90026
Jennifer Viola, Los Angeles ,CA 90026
Amy Shorr, Los Angeles ,CA 90026
Liz Cohen, Los Angeles ,CA 90027
Karyl Rapport, Los Angeles ,CA 90027
Amalia Alva, Los Angeles ,CA 90027
Roxanne Stys, Los Angeles ,CA 90027
Christian Szymczak, Los Angeles ,CA 90027

Roland Giedraitis, Los Angeles ,CA 90027

Assembly District 55

Paul Krogstad, Culver City ,CA 90230
Jim Soloman, Culver City ,CA 90230
Jeff Burne, Culver City ,CA 90230
Sean Veder, Culver City ,CA 90230
Jim Fisher, Culver City ,CA 90230
Dave Blair, Culver City ,CA 90230
George Valle, Culver City ,CA 90230
Anthony Loreda, Culver City ,CA 90230
Rosa Larios, Culver City ,CA 90230

Jim Merlis, Culver City ,CA 90230
Dennis Briggs, Culver City ,CA 90230
Bryant Horowitz, Culver City ,CA 90230
Ron Foster, Culver City ,CA 90230
Dave Zakin, Culver City ,CA 90230
Alison Gifford, Culver City ,CA 90230
Elizabeth Cowgill, Culver City ,CA 90230

Ashleigh Matthias, Culver City ,CA 90230

Carolina Chamecki, Culver City ,CA 90230

Christine Marshall, Culver City ,CA 90230

Susan Rosales, Culver City ,CA 90230
Rebecca Stephenson, Culver City ,CA 90230

Ronnie Kass, Culver City ,CA 90230
Heidi Behforouz, Culver City ,CA 90230
Diana Zaslove, Culver City ,CA 90230
Ashleigh Morales, Culver City ,CA 90230

Josette Trux, Culver City ,CA 90230
Jenn Engstrom, Culver City ,CA 90230
Bridgitte Langeneckert, Culver City ,CA 90230

Anonymous Donor, Culver City ,CA 90230

Assembly District 66

David Monahan, Manhattan Bch ,CA 90266

Brendan Fisher, Manhattan Beach ,CA 90266

Darren Kamjnoto, Manhattan Beach ,CA 90266

Andrew Spielberg, Manhattan Beach ,CA 90266

Walter Shaw, Manhattan Beach ,CA 90266

Christopher Simpson, Manhattan Beach ,CA 90266

Blum Conant, Manhattan Beach ,CA 90266

Sander Shipper, Manhattan Beach ,CA 90266

Mark Heaney, Manhattan Beach ,CA 90266

Dennis White, Manhattan Beach ,CA 90266

Richard Tedesco, Manhattan Beach ,CA 90266

John Corrales, Manhattan Beach ,CA 90266

Andy Moore, Manhattan Beach ,CA 90266

Craig Blum, Manhattan Bch ,CA 90266

Margaret Toberman, Manhattan Beach ,CA 90266

Samantha Buchanan, Manhattan Beach ,CA 90266

Elizabeth Coppedge, Manhattan Beach ,CA 90266

Patricia Monahan, Manhattan Beach ,CA 90266

Catherine Nall, Manhattan Beach ,CA 90266

Susan Carnan, Manhattan Beach ,CA 90266

Virginia Moore, Manhattan Beach ,CA 90266

Christine Starczak, Manhattan Beach ,CA 90266

Nicole Rodriguez Gasperov, Manhattan Beach ,CA 90266

Cathleen Dominguez, Manhattan Beach ,CA 90266

Liz Donahue, Manhattan Beach ,CA 90266

Tami Shalvarjian, Manhattan Beach ,CA 90266

Patricia Haught, Manhattan Beach ,CA 90266

Summer Sheets, Manhattan Beach ,CA 90266

Cami Wedbush, Manhattan Beach ,CA 90266

Pamela Nemzer, Manhattan Beach ,CA 90266

Gary Cote, Long Beach, ,CA 90803

Annie Allen, Manhattan Beach ,CA 90266

Gil Cabble, Long Beach ,CA 90803

Liz Donahue, Manhattan Beach ,CA 90266

David Ickler, Long Beach ,CA 90803

Andi Zbojniewicz, Manhattan Beach ,CA 90266

Larry Monahan, Long Beach ,CA 90803

Matt Davidson, Long Beach ,CA 90803

Scott Beck, Manhattan Beach ,CA 90266

James Ostach, Long Beach ,CA 90803

Laurence Sharma, Long Beach ,CA 90803

Camille Chittenden, Manhattan Beach ,CA 90266

Karl Draney, Long Beach ,CA 90803

Carol Goldman, Long Beach ,CA 90803

Taylor Herron, Manhattan Beach ,CA 90266

Penny Hill, Long Beach ,CA 90803

Adriana Dworak, Manhattan Beach ,CA 90266

Ericka Koester, Long Beach ,CA 90803

Andrea Spilsbury, Long Beach ,CA 90803

Mindala Wilcox, Manhattan Bch ,CA 90266

Kathleen Volchko Gallis, Long Beach ,CA 90803

Laurie Content, Manhattan Beach ,CA 90266

Summer Rathswohl, Long Beach ,CA 90803

Kelton Durham, Manhattan Beach ,CA 90266

Nancy Mullio, Long Beach ,CA 90803

Anneisabel Brousseau, Manhattan Beach ,CA 90266

Kirstie Gaskey, Long Beach ,CA 90803

Bert Donahue, Manhattan Beach ,CA 90266

Tina Bowman, Long Beach ,CA 90803

Kristine Kelly, Long Beach ,CA 90803

Assembly District 69

Laurie Manzo, Long Beach ,CA 90803

Ray Mullio, Long Beach ,CA 90803

Margaret Meloni, Long Beach ,CA 90803

Tony Correa, Long Beach ,CA 90803

Anonymous Donor, Long Beach ,CA 90803

Gordana Kajer, Long Beach ,CA 90803

Lee Mayer, Long Beach ,CA 90803

Lyn Diras, Long Beach ,CA 90803

Lynn Malis, Long Beach ,CA 90803

Amara Phelps, Long Beach ,CA 90803

Cris White, Long Beach ,CA 90803

Sydney Simon, Long Beach ,CA 90803

Taylor Kayse, Long Beach ,CA 90803



California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 30th, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

Environment California Research & Policy Center has one mission that drives everything we do: to protect our natural world. We envision a better, greener California: one that protects and restores more places where all life can thrive and offers us and our children the opportunity to live healthier, more enriching lives.

Azul is a grassroots organization working to conserve marine resources. We treasure the life-sustaining force of the ocean, as well as the physical and spiritual nourishment it provides us. We are a Gente powered and led effort, focused first on celebrating our rich Latino conservation traditions and connecting them to current solutions. Our work is based in authentic engagement, community building, and collaboration.

That's why we welcomed the goal set by Governor Newsom and his Administration of protecting 30% of lands and coastal waters by 2030 ('30x30'), which was codified with the passage of SB337 this Fall. This goal reflects the new scientific consensus that humanity must set aside much more of the ocean to sustain healthy marine life populations and ecosystems.

The State of California's network of Marine Protected Areas (MPAs), created by the Marine Life Protection Act (MLPA), has demonstrated that area-based marine protection works: during the state's recently completed Decadal Management Review (DMR), scientific analysis showed that the network has generally succeeded in protecting ocean habitats, increasing biomass of fishery-targeted species, and enhancing the climate resilience of California's coastal ecosystems.

However, the amount of coastal waters currently protected within the statewide MPA network falls far below the state's 30% goal. Only 12% of California state waters are covered in highly to fully protected areas – the types of protected areas known to provide the best conservation outcomes – and an additional 4% is covered in lightly protected areas that allow considerable human impacts within their boundaries. In total, 16% of state waters are currently protected within an MPA.

We must do more. Coastal and marine ecosystems face growing threats related to climate change and increased human use, as well as emerging threats from new ocean uses such as offshore wind and aquaculture. In the face of these threats, now is the time to make significant improvements to the existing MPA network via an adaptive management process to better protect our ocean and coastal resources in the future.

That is why we are submitting two petitions for rulemaking intended to strengthen the network's ability to conserve critical habitat types and better manage the network. Each of the two petitions stands on their own and are based on new and updated science that were not available to policymakers at the time of designating the original network. The areas we have proposed for expansion or strengthening are prime examples of where California's ocean life stands to benefit through new or updated permanent, area-based protections created under the MLPA.

The areas we are proposing are likely not the only areas that would fit the criteria for enhanced protection laid out in our petitions, nor are our criteria the only ecological criteria that could be used to systemically strengthen the existing network in line with the state's new 30x30 goal. We urge the Fish and Game Commission and all relevant state agencies to conduct analyses that will highlight the habitat types, species, and regions underserved by the current network, with an eye toward building a state MPA network that is resilient in the face of rising ocean temperatures, emerging threats, and continued pressure on endangered and threatened species.

Californians can be proud that we have led the way in ocean conservation over the past decades. It's time to take up the mantle of leadership once again, globally and nationally, not only to create a better future for the amazing life off of our own coasts, but also to inspire other decision makers to do so along every coastline, in every part of the ocean.

With your leadership, our groundbreaking marine protected area network can take its next leap forward.

Sincerely,

Laura Deehan
Director
Environment California Research & Policy Center

Marcela Gutiérrez-Graudiņš
Founder / Executive Director
Azul

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 29, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Dear President Sklar and Honorable Commissioners,

We are writing in support of Environment California Research & Policy Center's petition to increase protections for remaining persistent kelp forests in California state waters through the Marine Life Protection Act (MLPA)'s adaptive management process. As kelp forests contend with increased threats from climate change, predator loss, and invasive species, taking action to preserve the highly persistent kelp forest areas that have so far withstood these threats will be critical to the state's efforts to conserve this essential ecosystem and achieve area-based conservation targets.

California's kelp forests provide numerous and invaluable ecological and environmental benefits. These underwater ecosystems serve as critical nurseries for a wide variety of marine species, providing shelter and food for numerous fish, invertebrates, and marine mammals. They support thriving commercial and recreational fisheries, attract tourists and divers, and can help dampen the impacts of coastal erosion and storm impacts. However, recent decades have seen a decline in kelp forest cover across the Pacific West Coast, including California, due to a combination of natural and human-induced factors such as a major marine heatwave and the loss of predators of kelp grazers by overfishing and disease.

Marine protected areas are a critical tool for increasing the resilience of kelp ecosystems in the face of these stressors. However, the state of California's MPA network has gaps in coverage for the state's most persistent kelp forests. Recent analyses identifying the extent of persistent giant kelp and bull kelp forests in California found only 20.9% of the most highly persistent forests in Central California, 8.4% in Southern California, and less than 1% in Northern California are fully protected.^{1,2} Improving the MPA network to better protect our remaining stable kelp forests will aid in increasing the resilience of these ecosystems and prevent further loss of kelp cover.

State officials should utilize all tools at their disposal to address the ongoing threats to kelp forests. Marine protected areas like those created through the California MLPA are a tool that

¹ Arafeh-Dalmau et al. 2021, Southward decrease in the protection of persistent giant kelp forests in the northeast Pacific. *Communications Earth & Environment*. <https://doi.org/10.1038/s43247-021-00177-9>

² Arafeh-Dalmau et al. 2023, Shortfalls in the protection of persistent bull kelp forests in the USA. *Biological Conservation*. <https://doi.org/10.1016/j.biocon.2023.110133>

has been underutilized in efforts to protect and restore our kelp forests—and one we cannot afford to ignore.

The state has an opportunity to incorporate these new scientific findings into the state network of marine protected areas, ensuring the network better addresses emerging threats to our kelp forests and provides the best possible support for restoration efforts. The petition submitted by Environment California RPC is supported by recent scientific analysis employing 35 years of satellite data to identify persistent kelp forests, and is based on extensive global research demonstrating the benefits of highly to fully protected areas.

As scientists who have spent decades studying our ocean ecosystems, we urge you to take swift action to protect and preserve our coastal and marine resources and natural heritage in the face of increasing climate impacts. Our future depends on it.

Thank you for your ongoing efforts to protect California's ocean heritage, and we look forward to engaging in this important work for years to come.

Sincerely,

Dr. Nur Arafteh-Dalamu
Postdoctoral Scholar, Hopkins Marine Station, Stanford University
Honorary Fellow, University of Queensland

Dr. Fiorenza Micheli
David and Lucile Packard Professor of Marine Science, Stanford University

Dr. Kyle Cavanaugh
Professor, Department of Geography, University of California, Los Angeles

Dr. Dawn Murray
Professor Environmental Studies, Antioch University Santa Barbara

Dr. Carolina Olguin-Jacobson
Postdoctoral Scholar, Hopkins Marine Station, Stanford University



WOODS HOLE
OCEANOGRAPHIC
INSTITUTION

Tom W. Bell

Assistant Scientist

MS #12, 266 Woods Hole Road, Woods Hole, MA 02543

Cell: 619 857-1233

tbell@whoi.edu www.whoi.edu

November 29, 2023

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Dear President Sklar and Honorable Commissioners,

I am writing in support of Environment California Research & Policy Center's petition to increase protections for remaining persistent kelp forests in California state waters through the Marine Life Protection Act (MLPA)'s adaptive management process. As kelp forests contend with increased threats from climate change, predator loss, and invasive species, taking action to preserve the highly persistent kelp forest areas that have so far withstood these threats will be critical to the state's efforts to conserve this essential ecosystem and achieve area-based conservation targets.

California's kelp forests provide numerous and invaluable ecological and environmental benefits. These underwater ecosystems serve as critical nurseries for a wide variety of marine species, providing shelter and food for numerous fish, invertebrates, and marine mammals. They support thriving commercial and recreational fisheries, attract tourists and divers, and can help dampen the impacts of coastal erosion and storm impacts. However, recent decades have seen a decline in kelp forest cover across the Pacific West Coast, including California, due to a combination of natural and human-induced factors such as a major marine heatwave and the loss of predators of kelp grazers by overfishing and disease.

Marine protected areas are a critical tool for increasing the resilience of kelp ecosystems in the face of these stressors. However, the state of California's MPA network has gaps in coverage for the state's most persistent kelp forests. Recent analyses identifying the extent of persistent giant kelp and bull kelp forests in California found only 20.9% of the most highly persistent forests in Central California, 8.4% in Southern California, and less than 1% in Northern California are fully protected. Improving the MPA network to better protect our remaining stable kelp forests will aid in increasing the resilience of these ecosystems and prevent further loss of kelp cover.

State officials should utilize all tools at their disposal to address the ongoing threats to kelp forests. Marine protected areas like those created through the California MLPA are a tool that has been underutilized in efforts to protect and restore our kelp forests—and one we cannot afford to ignore.

The state has an opportunity to incorporate these new scientific findings into the state network of marine protected areas, ensuring the network better addresses emerging threats to our kelp forests and provides the best possible support for restoration efforts. The petition submitted by Environment California RPC is supported by recent scientific analysis employing 35 years of satellite data to identify persistent kelp forests, and is based on extensive global research demonstrating the benefits of highly to fully protected areas.

As scientists who have spent decades studying our ocean ecosystems, we urge you to take swift action to protect and preserve our coastal and marine resources and natural heritage in the face of increasing climate impacts. Our future depends on it.

Thank you for your ongoing efforts to protect California's ocean heritage, and I look forward to engaging in this important work for years to come.

Sincerely,

A handwritten signature in black ink that reads "Tom Bell". The script is fluid and cursive, with the first letters of each name being capitalized and prominent.

Dr. Tom Bell

Scientist, Department of Applied Ocean Physics and Engineering, Woods Hole Oceanographic Institution

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 29, 2023

Re: Support for new MPA to protect kelp, seabirds, and sharks of Santa Cruz

Dear President Sklar and Honorable Commissioners,

As a local seabird and marine ecosystem biologist, I am writing in support of a new State Marine Reserve proposed by Environment California and Azul to protect kelp, seabirds, and sharks in coastal waters of Santa Cruz County, CA. As climate change impacts ocean conditions, corresponding shifts in fishing behavior will create new risks for forage fish and place increasing pressure on ocean wildlife. Providing protections now for forage fish within critical nearshore kelp forests and sandy bottom environments is essential for mitigating future threats to migratory seabirds, whales, and sharks.

The proposed MPA off Soquel Point in Santa Cruz is positioned within the northern Monterey Bay bight, a biologically rich and unique marine region encompassing nearshore kelp forests, sandy beach, and deeper soft-bottom habitats. Physically, these waters are influenced by the Año Nuevo upwelling front and the area is characterized by a broad shallow shelf. These features create a unique ocean circulation pattern where freshly upwelled and nutrient rich cold-water eddies become slower and recirculate within this semi-enclosed bay¹. These waters are ideal growing conditions for phytoplankton, crustaceans and cephalopods, larval fishes and forage fishes (anchovies, sardines, herring), which create the base of the food web for predatory sharks, seabirds, and whales.

This biologically diverse area is recognized as important to more than 100 species of marine seabirds and shorebirds, mammals and sea turtles (Harvey & Benson 1997², Henkel 2006³, Neuman et al. 2008⁴). In the summer months, enormous flocks of Sooty Shearwater travel 20,000 km from New Zealand 20,000 km to feed on the anchovy schools (Figure 1) within the

¹ Graham and Largier 1997. [Upwelling shadows as nearshore retention sites: the example of northern Monterey Bay](#). Continental Shelf Research, 1997

² Harvey and Benson 1997. Marine Bird and Mammal Distribution and Abundance in Monterey Bay, During 1996. Moss Landing Marine Laboratories Technical Publication 97-02, 80pp.

³ Henkel 2004. [Seasonal Abundance of Marine Birds in Monterey Bay, California](#). Western Birds: 126-146.

⁴ Neuman, Henkel, and Page. 2008. [Shorebird use of sandy beaches in central California](#) Waterbirds.

northern bight of the Bay (Figure 2) (Adams et al. 2012⁵). This annual natural feeding frenzy phenomenon is described as the “River of Birds” and is fueled by the dense nearshore aggregations of anchovies, which are also host to iconic lunge-feeding humpback whales,⁶ pelicans, and gulls.

An “Oasis Effect” has been described for these nearshore areas in California⁷ by which whales and other marine animals aggregate in large numbers to feed in nearshore “oases” of forage fish during times of poor food availability offshore. Similarly, Endangered Leatherback Sea Turtles travel from offshore areas to feed within the bight when ocean conditions nearshore favor jellyfish⁸. The connection between nearshore and offshore forage fish dynamics figures importantly in the future conservation of these globally connected migratory species⁹.

However, these areas are not protected from extractive uses including fisheries. Despite 30 years of protected designation within the Monterey Bay National Marine Sanctuary, Adelaars et al. 2012¹⁰ found that the relative level of conservation, particularly within the northern bay sandy shelf area of the Sanctuary, is low. The Sanctuary primarily protects the waters from offshore oil and gas exploitation, but does not protect against the impacts of fishing and many other human activities which may compromise thriving marine food webs. Large important areas of nearshore sandy-bottom and kelp forest habitats in Monterey Bay remain unprotected (see Figure 7 in Adelaars et al.).

In addition, over the past 10 years our coastal ecosystems have seen significant shifts in the face of a changing climate. Warming waters – including intense episodic marine heatwaves – have caused mobile species to temporarily shift their geographic ranges to remain within suitable environmental conditions,¹¹ often increasing the chances for harmful interactions with fisheries and other human activities. In the Monterey Bay, warming waters have led to habitat

⁵ Adams, MacLeod, Suryan, Hyrenbach and Harvey. 2012. [Summer-time use of west coast US National Marine Sanctuaries by migrating sooty shearwaters \(*Puffinus \[=Ardennna\] griseus*\)](#). Biological Conservation 156: 105-116.

⁶ [video] [Sooty Shearwaters on Monterey Bay feeding with Humpback Whales](#) (MB Whale Watch)

⁷ Benson, Croll, Marinovic, Chavez, and Harvey. 2002. Changes in the cetacean assemblage of a coastal upwelling ecosystem during El Niño 1997-98 and La Niña 1999. Prog. Oceanogr. 54:279-291.

⁸ Benson, Forney, Harvey, Carretta, and Dutton. 2007 Abundance, distribution, and habitat of leatherback turtles (*Dermochelys coriacea*) off California, 1990–2003. Fish. Bull. 105:337–347.

⁹ [International Agreement on the Conservation of Albatrosses and Petrels \(Conservation of Migratory Species\)](#).

¹⁰ Adelaars, Bassett, Donlou, Marks, Pardieck, and Lindholm. 2012. [Examining the Conservation Level of Marine management Areas within the Monterey Bay National Marine Sanctuary: How Protected is the Sanctuary?](#) Marine Sanctuaries Conservation Series ONMS-12-04. U.S. Department of Commerce, NOAA, Silver Spring, MD. 41 pp. [NB: Figure 7 - Soquel Cove area]

¹¹ Pecl, Araju et al. 2017. [Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being](#). Science

compression for whales and other mobile marine species, causing them to move inshore more frequently to feed and resulting in record-high whale entanglements in fishing gear.¹² Other species such as Common Murre, Rhinoceros Auklets and Brandt's Cormorant engage in prey switching as a strategy to buffer prey availability¹³, utilizing species from kelp forests and nearshore ecosystems when offshore species are less abundant. Maintaining healthy nearshore environments with a diversity of prey sources for predators experiencing climatic stressors is critical for the climate resilience of the overall ecosystem. However, the very changes underpinning these shifts in wildlife behavior can also influence fisher behavior,¹⁴ putting pressure on these food webs at the very time that they're needed to maintain ecosystem resilience.

Conservation of healthy forage fish populations in the face of climate change is critical. A recent review highlighted the need for conservation of the prey base with regard to the seabird populations in California, noting that where humans and wild predators coexist, human fishers are far more efficient in their prey harvesting activities¹⁵. Further, a global review by Cury et al. 2011 suggested a precautionary approach of leaving one third of the fish biomass for the seabirds¹⁶. Both of these studies point to the need for establishing protections of forage fish for seabirds which are not exploited to full capacity. A new state MPA would strengthen protections for forage fish now, before shifting ocean conditions bring new threats to this area. The proposed MPA area is not currently not currently subject to any significant commercial take, making protecting this area now of minimal economic impact to existing fisheries.

Conservation in this area is aided by the participation of actively engaged citizen scientists. Citizens in Santa Cruz County are very concerned about marine conservation and actively participate in citizen science activities including water quality (Coastal Watershed Council), intertidal and subtidal monitoring (LIMPETS¹⁷, Reef Check California) and beach monitoring (BeachCOMBERS, Nevins et al. 2011¹⁸). Since 1997, citizen scientists have been monitoring

¹²Santora, Mantua et al. 2020. [Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements](#). Nature

¹³ Warzybok et al. 2018 [Prey switching and consumption by seabirds in the central California Current upwelling ecosystem: Implications for forage fish management](#). J Marine Systems

¹⁴ Pichegru et al. 2012. [Industrial fishing, no-take zones and endangered penguins](#). Biol. Cons. 156:117-125.

¹⁵ Ainley, Adams, Jahncke (eds). 2014 [Towards ecosystem-based fishery management in the California Current system—predators and the preyscape: a workshop](#).

¹⁶ Cury et al. 2011. [Global Seabird Response to Forage Fish Depletion—One-Third for the Birds](#). Science

¹⁷ Pearse et al. 2015 [Long-term monitoring of surfgrass meadows in the Monterey Bay National Marine Sanctuary : recovery followed by stability after the termination of a domestic sewage discharge](#).

¹⁸ Nevins, Benson, Phillips, de Marignac, DeVogelaere, Ames and Harvey. 2011. [Coastal Ocean Mammal and Bird Education and Research Surveys \(BeachCOMBERS\), 1997-2007: ten years of monitoring beached marine birds and mammals in the Monterey Bay National Marine Sanctuary](#).

impacts to marine birds and mammals in and around the proposed MPA, contributing significant evidence for understanding human impacts, documenting the recovery of species in the region, and complementing long-term monitoring efforts by the state.

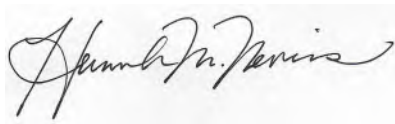
Northern Monterey Bay is host to a multitude of ocean-focused activities and these have created a thriving nature-based economy: surfers treasure the waves of Pleasure Point from Soquel Point to Capitola; beachgoers enjoy tidepooling, birdwatching, fossil hunting, and fishing along the rocky and sandy shores of New Brighton and Seacliff Beaches. Recently, locals have called this area a “Shark Park”, due to the increased use of the area by juvenile white sharks as seen by drones. This natural phenomenon has created a boon for shark-ecotourism businesses based out of Santa Cruz and Capitola (Figure 3). An established MPA in the area would help provide long-term protections for this oft-maligned species which requires nearshore sandy beaches for growth and survival, while supporting local nature-focused businesses.

The proposed MPA would also amplify nearby land-based protected areas, including four California State Parks (New Brighton, Seacliff Beach, Manresa and Sunset State Beaches). Establishing a land-sea connection between terrestrial and coastal protected areas will not only enhance broader ecological ecosystem function, but could connect users within the proposed MPA to interpretive aspects of state parks, which offer extensive access (trails, beach access, RV and tent camping) and interpretive resources (rangers and visitor centers).

In summary, the proposed MPA would provide multiple species and habitats ecological benefits and greater resilience in the face of climate-related impacts and shifting fishing behaviors, as well as leverage local citizen efforts to increase coastal protection and enhancements for marine species. This effort would enable future generations to enjoy firsthand the natural phenomena of the River of Birds by migratory Sooty Shearwaters and the nursery area found to be important for juvenile White Sharks by protecting the basis of the food web in this ecosystem.

Thank you for considering this proposed designation.

Sincerely,

A handwritten signature in cursive script, reading "Hannah Nevins". The signature is written in dark ink on a light background.

Hannah Nevins, M.S. MSc., Seabird Biologist and Ecologist, Santa Cruz, CA



Figure 1. Shearwaters feed on small schooling fishes including anchovies in nearshore waters of northern Monterey Bay. (Photo: Ingrid Taylor, New Brighton Beach, CA)

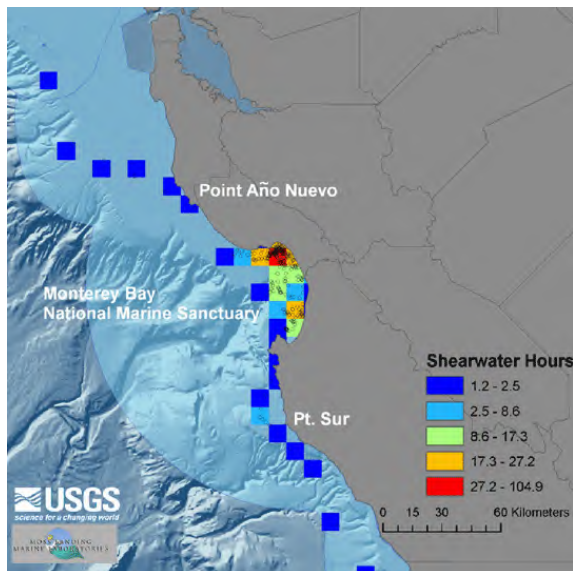


Figure 2. Satellite tracking of migratory Sooty Shearwaters indicate the valuable feeding area in northern Monterey Bay (red area). Northern area is proposed is for greater protection of forage fish important to migratory seabirds and sharks. (Data: USGS/MLML)



Figure 3. Soquel Cove is locally known as the "Shark Park." Passengers on a shark-watching tour based from Santa Cruz check out an approaching great white shark in the sandy bottom habitat off Seacliff Beach in northern Monterey Bay, CA. (Photo Kevin Painchard/Lookout Santa Cruz)

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 30th, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

As scientists, researchers, and educators who work to understand our changing oceans and inspire the next generation of ocean stewards, we write to express our support for the expansion and strengthening of California's network of Marine Protected Areas (MPAs) to help safeguard the state's diverse marine ecosystems and ensure the long-term resilience of our ocean habitats.

Globally, the ocean is at a critical juncture, with escalating global temperatures, declining biodiversity, and a growing number of endangered marine species. California's coastal ecosystems have not been spared these global trends: Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ Only an average of 55 Pacific leatherback turtles are now found foraging off California's coast every year, a notable decrease from the yearly average of 128 Pacific leatherbacks observed in the region from 1990 to 2003.² Marine heatwaves have doubled over the last 30 years and have become more intense and longer in duration, putting stress on California's marine species and ecosystems.³

Now, California has a unique opportunity to take bold, effective and science-based action to conserve its marine biodiversity by expanding its groundbreaking network of state MPAs. MPAs, like state parks on land, protect unique and important ocean habitats from destructive human activities that can damage the integrity of marine ecosystems. Globally and in California, strongly protected and well-enforced MPAs have been shown to be highly effective in conserving biodiversity, enhancing ecosystem resilience, and mitigating the impacts of climate

¹ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

² Benson, Scott R., Karin A. Forney, Jeffrey E. Moore, Erin L. LaCasella, James T. Harvey, and James V. Carretta. ["A Long-Term Decline in the Abundance of Endangered Leatherback Turtles, Dermochelys Coriacea, at a Foraging Ground in the California Current Ecosystem."](#) *Global Ecology and Conservation* 24 November 2020.

³ IPCC (2021). Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte VP, Zhai A, Pirani SL, Connors C, Péan S, et al. (Eds.)].;

change on our oceans.⁴ Well-designed and well-implemented reserves better preserve natural interactions within ecosystems, allowing for greater resiliency in the face of rising global temperatures and changing environmental conditions.⁵

California's network of MPAs, established through the 1999 Marine Life Protection Act, celebrated its tenth anniversary last year. The state's recent Decadal Management Review (DMR) analyzed a decade of monitoring data and showed that the MPA network has generally been effective at protecting ocean habitats and increasing fisheries-targeted species' biomass.⁶ Now, in the face of increasing threats, we need to build on this system and maintain California's role as a national and global leader in the effort to protect our ocean habitats.

That's why we, as scientists, researchers, and educators, urge you to expand and strengthen our state's network of MPAs via the adaptive management process of the DMR.

Specifically, we support the expansion of the MPA network to include additional protections for California's most resilient kelp forests. While these vital and iconic ecosystems have faced declines statewide in recent years, kelp forests in some areas have persisted or bounced back quickly in the face of marine heatwaves and other disturbances.⁷ By expanding protections for these resilient forests under the MLPA, the state can minimize direct human impacts in these relatively healthy areas, helping to ensure their continued persistence and enhancing the effectiveness of restoration efforts for declining kelp ecosystems nearby. Globally, kelp restoration has been most successful in places adjacent to/contiguous with healthy kelp forest ecosystems.⁸

It is also vital that existing California MPAs are able to achieve their stated goals of conserving biodiversity and ecosystem health. We encourage the state to consider increasing protections for MPAs that are currently only lightly or minimally protected, especially in places where weaker or more complicated regulations lead to poor compliance and enforcement. Research has shown that highly and fully protected areas, where few if any destructive or extractive activities are allowed, provide greater ecological benefits than lightly or minimally protected areas.⁹ The

⁴ James Horrox, Kelsey Lamp and Steve Blackledge. [New Life for the Ocean: How Marine Protections Keep Our Waters Wild](#). Environment America Research & Policy Center & Frontier Group, February 3, 2021

⁵ Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](#). *Science* **373**, eabf0861(2021). DOI:10.1126/science.abf0861

⁶ California Department of Fish and Wildlife. (2022). California's Marine Protected Area Network Decadal Management Review.;

⁷ Arafeh-Dalmau *et al.*, [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), *One Earth* 6, 1–19 November 17, 2023 ^a 2023 Published by Elsevier Inc.

⁸ Eger, A.M., Marzinelli, E.M., Christie, H., Fagerli, C.W., Fujita, D., Gonzalez, A.P., Hong, S.W., Kim, J.H., Lee, L.C., McHugh, T.A., Nishihara, G.N., Tatsumi, M., Steinberg, P.D. and Vergés, A. (2022), Global kelp forest restoration: past lessons, present status, and future directions. *Biol Rev*, 97: 1449-1475.

⁹ Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](#). *Science* **373**, eabf0861(2021). DOI:10.1126/science.abf0861

state's network currently protects 12% of state waters in highly- or fully-protected MPAs, as defined by Grorud-Colvert et al. (2021), which leaves 4% of the network lacking the most effective conservation protections.¹⁰ By expanding the level of protection to areas already identified as ecologically important, we can ensure that the area's vulnerable marine resources have the chance to recover and flourish.

Our ocean is not just a source of clean air, wildlife, and natural beauty but also a mystery that beckons exploration and discovery. It is our moral imperative to lead the nation and the world in taking bold actions to preserve the sea, ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

President Sklar and Honorable Commissioners, you have a chance to take up this imperative and champion the expansion and strengthening of California's network of Marine Protected Areas. By doing so, you will leave a lasting legacy of marine stewardship that will keep California at the forefront of ocean conservation, nationally and globally.

Thank you for your unwavering commitment to the welfare of our ocean and for considering this urgent matter. Together, we can ensure a healthier, more abundant future for the unique marine ecosystems that define California.

Sincerely,

Michael Akresh
Faculty
Antioch University

Alice Alldredge
Professor Emeritus
University of California, Santa Barbara

Steven Allison
Professor
University of California, Irvine

Anupa Asokan
Ocean advocate

Peter Auster
Senior Research Scientist & Research Professor
Emeritus
Mystic Aquarium & University of Connecticut

Nevé Baker
PhD Candidate
University of California Santa Cruz

Leocadio Blanco Bercial
Assistant Professor
Arizona State University - Bermuda Institute of
Ocean Sciences

Bailey Drechsler
Professor
Cuesta College

¹⁰ Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](https://doi.org/10.1126/science.abf0861). *Science* **373**, 0861(2021). DOI:10.1126/science.abf0861

Michelle María Early Capistrán
Postdoctoral Scholar
Stanford University

Rikki Eriksen
Director Marine Spatial Ecology
California Marine Sanctuary Foundation

Paul Faulstich
Emeritus Professor of Environmental Analysis
Pitzer College

Sarah Hameed
Blue Parks Director & Senior Scientist
Marine Conservation Institute

Brett Holland
Faculty
CSUS

Flora Lu
Professor of Environmental Studies
University of California, Santa Cruz

Kathy Ann Miller
Curator of Algae
Herbarium, University of California

Lisa Murphy
co-founder, primary researcher and educator
Gold Country Bat Project

Dawn Murray
Professor
Antioch University

Jacquelin Mutter
National One Water Planning Lead
HDR

Erin Naegle
STEM Dean of Instruction
Cuesta College

Hannahrose Nevins
Seabird Ecologist
Seabird Consultant

Gretchen North
Professor of Biology
Occidental College

Carolina Olguin Jacobson
Postdoctoral fellow
Hopkins Marine Station of Stanford University

Gorka Sancho
Professor
College of Charleston

Joanna Tang
PhD Candidate
UCSB

Robert Voeks
Professor
Cal State University, Fullerton, Department of
Geography & the Environment

Charles Zender
Professor of Earth System Science
University of California, Irvine

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0030
(916) 319-2030

DISTRICT OFFICES
857 SANTA ROSA STREET
SAN LUIS OBISPO, CA 93401
(805) 548-3001

60 PACIFIC STREET, SUITE 575G
MONTEREY, CA 93940
(831) 648-2832



COMMITTEES
HIGHER EDUCATION
MILITARY AND VETERANS AFFAIRS
NATURAL RESOURCES
PUBLIC EMPLOYMENT AND
RETIREMENT
RULES

SELECT COMMITTEES
CHAIR, OFFSHORE WIND ENERGY IN
CALIFORNIA
CHAIR, SERVING STUDENTS WITH
DISABILITIES

VICE CHAIR, JOINT COMMITTEE ON
FISHERIES AND AQUACULTURE

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 28th, 2023

Re: Strengthening and Expanding California's Marine Protected Area Network

Dear President Sklar and Honorable Commissioners,

As an Assemblymember and advocate for the health and vitality of California's coastal ecosystems, I write to express my support for the expansion of the state's network of Marine Protected Areas (MPAs) to include the expansion and strengthening of Point Buchon SMCA and Natural Bridges SMR. Protecting specific habitat areas, including the remaining areas of stable kelp forests, and increasing the rigor of existing marine protected areas are crucial steps in safeguarding our diverse marine species and ensuring the long-term well-being of the ecosystems off our shores.

The state of our ocean is at a critical juncture, with escalating global temperatures, declining biodiversity, and a growing number of endangered marine species. Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ Pollution, overfishing, offshore drilling and other human activities are threatening ocean habitat and marine species, while the changing climate increases the risk of extreme weather events and puts even greater stress on ocean ecosystems.^{2,3}

In the face of these mounting threats, California has a unique opportunity to take bold and effective action to conserve ocean habitats and ensure a greater abundance of life off our coast. Over two decades ago, the state passed the groundbreaking Marine Life Protection Act (MLPA), which called on the state to use one of the most powerful tools for ocean conservation: marine protected areas (MPAs).

¹ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

² James Horrox, Steve Blackledge and Kelsey Lamp, "[New Life for the Ocean: How marine protections keep our waters wild](#)," Environment America Research and Policy Center & Frontier Group, February 2021.

³ Arafah-Dalmau et al., [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), One Earth 6, 1–19 November 17, 2023 ^a 2023 Published

MPAs, like state parks on land, protect unique and important ocean habitats from activities that can damage ocean life. Areas that are strongly protected have been shown to be highly effective in conserving biodiversity, enhancing ecosystem resilience, and mitigating the impacts of climate change on our oceans.⁴ California's network of MPAs, foreseen in the MLPA, celebrated its tenth-anniversary last year, and the state's decadal management review showed that marine life in existing reserves better withstood recent marine heatwaves, and reserves across the state had higher biomass of commercially caught fish than areas lacking protection.⁵ Now, we need to build on this system and maintain California's role as a leader, both nationally and globally, in the fight to protect more ocean habitats.

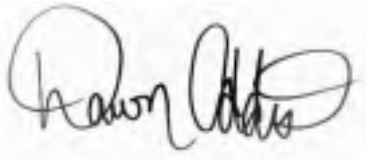
That's why I urge you to expand our state's network of MPAs within the adaptive management process of the Decadal Management Review. In particular, I am writing in support of the strengthening and expansion of Point Buchon SMCA and Natural Bridges SMR off the coast of my community.

We, as Californians, have a deep love for our ocean and feel a profound responsibility to participate in decisions that impact our state's coastal waters. Our ocean is not just a source of clean air, wildlife, and natural beauty but also a mystery that beckons exploration and discovery. It is our moral imperative to lead the nation and the world in taking bold actions to preserve the sea in our own backyard, ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

In conclusion, we strongly urge you, Honorable Commissioners, to expand California's MPA network to encompass areas of persistent kelp, with a particular focus on safeguarding the strengthening and expansion of Point Buchon SMCA and Natural Bridges SMR.

Thank you for your unwavering commitment to the welfare of our ocean and for considering this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Dawn Addis", written over a light gray rectangular background.

DAWN ADDIS
Assemblymember, 30th District

⁴ James Horrox, Steve Blackledge and Kelsey Lamp, "[New Life for the Ocean: How marine protections keep our waters wild](#)," Environment America Research and Policy Center & Frontier Group, February 2021.

⁵ California Department of Fish and Wildlife. [California's Marine Protected Area Network Decadal Management Review](#). 2022.



MAYOR AND CITY COUNCIL

809 Center Street, Room 10, Santa Cruz, CA 95060 • (831) 420-5020 • Fax: (831) 420-5011 • citycouncil@cityofsantacruz.com

November 30, 2023

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

RE: Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Dear President Sklar and Honorable Commissioners:

As a mayor and advocate for the health and vitality of California's coastal ecosystems, I write to express my unwavering support for the expansion of the State's network of Marine Protected Areas (MPAs), including the expansion of Natural Bridges SMR and the implementation of a new MPA at Pleasure Point. Protecting specific habitat areas, including the remaining areas of stable kelp forests, and increasing the rigor of existing marine protected areas are crucial steps in safeguarding our diverse marine species and ensuring the long-term well-being of the ecosystems off our shores.

The state of our ocean is at a critical juncture, with escalating global temperatures, declining biodiversity, and a growing number of endangered marine species. Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ Pollution, overfishing, offshore drilling, and other human activities are threatening ocean habitats and marine species, while the changing climate increases the risk of extreme weather events and puts even greater stress on ocean ecosystems.^{2 3}

In the face of these mounting threats, California has a unique opportunity to take bold and effective action to conserve ocean habitats and ensure a greater abundance of life off our coast. Over two decades ago, the State passed the groundbreaking Marine Life Protection Act (MLPA), which called on the State to use one of the most powerful tools for ocean conservation: MPAs.

MPAs, like state parks on land, protect unique and important ocean habitats from activities that can damage ocean life. Areas that are strongly protected have been shown to be highly effective in conserving biodiversity, enhancing ecosystem resilience, and mitigating the impacts of climate change on our oceans.⁴

¹ Meredith McPherson et. al, [Rapid shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021.

² James Horrox, Steve Blackledge and Kelsey Lamp, [How Life on the Ocean: How marine protections keep our waters wild](#), Environment America Research and Policy Center & Frontier Group, February 2021.

³ Arafteh-Dalmau et al., [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), One Earth 6, 1–19 November 17, 2023 * 2023 Published by Elsevier Inc.

⁴ James Horrox, Steve Blackledge and Kelsey Lamp, [How Life on the Ocean: How marine protections keep our waters wild](#), Environment America Research and Policy Center & Frontier Group, February 2021.

California's network of MPAs, foreseen in the MLPA, celebrated its tenth anniversary last year, and the State's decadal management review showed that marine life in existing reserves better withstood recent marine heatwaves, and reserves across the State had higher biomass of commercially caught fish than areas lacking protection.⁵

Now, we need to build on this system and maintain California's role as a leader, both nationally and globally, in the fight to protect more ocean habitats.

That is why I urge you to expand our State's network of MPAs within the adaptive management process of the Decadal Management Review. In particular, I am writing in support of the expansion of the Natural Bridges SMR and the implementation of a new MPA at Pleasure Point off the coast of my community, Santa Cruz.

As the author of the Marine Life Management Act and the Marine Life Protection Act, I am fully supportive of Environment California's request for additional marine protected areas. When I was Speaker pro tempore of the California Assembly (1996–2002), I was deeply involved in this subject. In my last year, I also authored the California Ocean Trust Act, which created the California Ocean Science Trust (Cal-OST). Cal-OST has written extensively about the successes within the MPAs, and more would be a very good idea.

We, as Californians, have a deep love for our ocean and feel a profound responsibility to participate in decisions that impact our State's coastal waters. Our ocean is not just a source of clean air, wildlife, and natural beauty but also a mystery that beckons exploration and discovery. It is our moral imperative to lead the nation and the world in taking bold actions to preserve the sea in our own backyard, ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

In conclusion, we strongly urge you, Honorable Commissioners, to expand California's MPA network to encompass areas of persistent kelp, with a particular focus on safeguarding Natural Bridges State Marine Reserve and implementing a new MPA at Pleasure Point. By doing so, you will leave a lasting legacy of environmental stewardship.

Thank you for your unwavering commitment to the welfare of our ocean and for considering this proposal. Together, we can ensure a healthier, more abundant future for the unique marine ecosystems that define California.

Sincerely,



Fred Keeley
Mayor

P:\CMAD\Word(Wpfiles)\SUZANNEU\Mayorfk 2022-2026\Letters\CA Fish and Game - Kelp Forests.docx

⁵ California Department of Fish and Wildlife, California's Marine Protected Area Network Decadal Management Review, 2022.



California Fish and Game Commission
715 P Street, 16th floor,
Sacramento, CA 95814

November 30th, 2023

RE: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Dear President Sklar and Honorable Commissioners:

Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ California sea otters are still listed as threatened under the Endangered Species Act, and one of the biggest barriers to this species' recovery and range expansion is increased shark bites from a lack of kelp forest cover. Marine

¹ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

heatwaves have doubled over the last 30 years, and have become more intense and longer in duration, putting stress on California's marine species and ecosystems.²

In the face of these mounting threats, California has a unique opportunity to take bold and effective action to conserve ocean habitats and ensure a greater abundance of life off our coast. Over two decades ago, the state passed the groundbreaking Marine Life Protection Act (MLPA), which called on the state to use one of the most powerful tools for ocean conservation: marine protected areas (MPAs).

MPAs, like state parks on land, protect unique and important ocean habitats from activities that can damage ocean life. Areas that are strongly protected have been shown to be highly effective in conserving biodiversity, enhancing ecosystem resilience, and mitigating the impacts of climate change on our oceans.³ By providing areas that serve as buffers against climate change, fully protected MPAs adapt to changing environmental conditions because they better preserve natural interactions within ecosystems, allowing for greater resiliency.⁴

California's network of MPAs, foreseen in the MLPA, celebrated its tenth anniversary last year, and the state's decadal management review showed that MPAs effectively protect ocean habitats and increase fishery-targeted species' biomass. Now, we need to build on this system and maintain California's role as a national and global leader in the fight to protect more ocean habitats.

Protecting specific habitat areas, including the remaining areas of stable kelp forests is a crucial step in safeguarding our diverse marine species and ensuring the long-term well-being of our ocean environments.

We support the expansion of the MPA Network to include some of the most resilient kelp forests along California's coastline, by expanding Cabrillo State Marine Reserve, Point Dume State Marine Conservation Area, South Point State Marine Reserve, Gull Island State Marine Reserve, Point Conception State Marine Reserve, Natural Bridges State Marine Reserve, and by creating a new MPA around the beautiful kelp forest off Pleasure Point near Santa Cruz. While kelp forests have faced declines statewide in recent years, in these areas they have persisted or bounced back quickly in the face of marine heatwaves and other disturbances.⁵ By expanding protections for

² García-Reyes, Marisol, Andrew Leising, Rebecca Asch, Steven Bograd, and Tessa M Hill. Rep. Indicators of Climate Change in California, ["Coastal Ocean Temperature"](#), *California Office of Environmental Health Hazard Assessment*, 2022.

³ Arafeh-Dalmau et al., [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), One Earth 6, 1–19 November 17, 2023 ^a 2023 Published by Elsevier Inc.

⁴ Jankowska, Emilia, et al. ["Climate Benefits from Establishing Marine Protected Areas Targeted at Blue Carbon Solutions."](#) *Proceedings of the National Academy of Sciences*, vol. 119, no. 23, 2022.

⁵ California Department of Fish and Wildlife. (2022). California's Marine Protected Area Network Decadal Management Review.

these resilient forests under the MLPA, the state can minimize direct human impacts in these relatively healthy areas, helping to ensure their continued persistence and enhancing the effectiveness of restoration efforts for declining kelp ecosystems nearby.

Enhancing the protection of California's kelp forests strongly aligns with Goals 1, 2, 3, and 4 of the MLPA by preserving natural diversity, sustaining marine life populations, protecting marine habitats for their intrinsic value, and improving recreational and educational opportunities while minimizing human disturbance.⁶ Safeguarding resilient kelp ecosystems will ensure critical habitat preservation for diverse marine species, including endangered sea otters and commercially valuable fish.

Our ocean is a source of clean air, wildlife, and natural beauty, but also a mystery that beckons preservation and exploration. California has the opportunity to lead the nation and the world in taking bold action to preserve the sea, ensuring its future and the well-being of the communities that rely on it for their survival and prosperity.

Sincerely,

Laura Deehan
State Director
Environment California Research and Policy Center

Tomas Valadez
CA Policy Associate
Azul

Robert Vergara
Roger Arliner Young (RAY) Ocean Conservation Fellow
Natural Resources Defense Council

Clara Castronovo
Board Chair
CALPIRG Students

Keith Shattenkirk
Program Officer, Healthy Lands and Waters
Patagonia

⁶ “Marine Life Protection Act.” CDFW. <https://wildlife.ca.gov/Conservation/Marine/MPAs/MLPA>.

Susan Jordan
Executive Director
California Coastal Protection Network

Ashley Eagle-Gibbs
Interim Executive Director
Environmental Action Committee of West Marin

Krista Rogers
Program Manager
Save Our Shores

Azsha Hudson
Marine Conservation Analyst
Environmental Defense Center

Chelsea Tu
Executive Director
Monterey Waterkeeper

Janet Cox
President
Climate Action CA

Pauline Seales
Organizer
Santa Cruz Climate Action Network

Dan Silver
Executive Director
Endangered Habitats League

Josefina Barrantes
30x30 Coordinator
Environmental Protection Information Center (EPIC)

Martha Camacho Rodríguez
Director
SEE (Social Eco Education)

Megan Shumway
Member
CHN, Sacramento Climate Coalition, SacAct

Antonina Markoff
Coordinator
The Climate Reality Project California State Coalition

Robert Gould, MD
President
San Francisco Bay Physicians for Social Responsibility

Esperanza Vielma
Executive Director
Environmental Coalition for Water Justice

Daniel Chandler
Steering Committee Member
350 Humboldt

Andria Ventura
Legislative and Policy Director
Clean Water Action/Clean Water Fund

Daniel Gluesenkamp
Executive Director
California Institute for Biodiversity

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 29, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

Environmental Action was founded in 1970, on the first Earth Day, as a community of grassroots environmental activists working for a cleaner, greener world. We are submitting the following 2,487 signatures in support of Environment California Research & Policy Center's petitions for rulemaking in the state's adaptive management process for the California Marine Protected Area network.

Each of the 2,487 people signed the following letter:

Dear Governor Newsom,

Sea otters bobbing in the surf. Whales diving deep to feed. Seabirds flying above. Our state's coastline is home to wildlife, large and small. As Californians, we've taken steps to protect this ocean heritage by creating a network of marine protected areas that, just like state parks on land, help protect and restore ocean life.

I urge you to strengthen this network through the Decadal Management Review in line with your important goal of protecting 30 percent of our state waters by 2030. Specifically, I urge you to expand the network to protect the state's last remaining kelp forests, critical homes to fish and sea otters, and to strengthen existing areas that don't yet provide high levels of protection to ocean life.

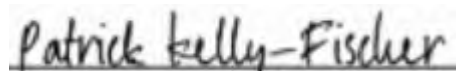
With your support, California can expand this network of ocean parks to create a brighter future for the ocean life that calls our state home, and hopefully inspire others across the country and around the world to follow our lead.

Sincerely,

As a group that works to protect our most amazing and at risk wildlife across the country, we know that preserving and restoring habitats will be critical to seeing our ocean life thrive. Whether it's a return of sea otters to more of the coastline or more abundant seabirds flying above our heads, expanding and strengthening California's network of marine protected areas will create a more hopeful future for the wild animals that call the state's coastline home.

But the decisions made on California's coast will not only impact the state's wildlife: as with many environmental issues, California's actions here have the potential to reverberate far and wide. If the state acts with ambition during this adaptive management process to fulfill the state's 30 by 30 commitment, it can set the national standard for ocean conservation, leading the country and the globe forward to a better future for our oceans.

Sincerely,



Patrick Kelly-Fischer
Board Member
Environmental Action

Cathy Crum, Agoura Hills, CA

Roger Ewing, Agoura Hills, CA

Debra Lichstein, Agoura Hills, CA

Brian Jeffery, Aguanga, CA

Geralyn Gulseth, Alameda, CA

David Howard, Alameda, CA

Mike Kehl, Alameda, CA

Jamie Le, Alameda, CA

Andrew Mueckenberger, Alameda, CA

Donna Pedroza, Alameda, CA

Mana-Jean Wagnon, Alameda, CA

Michael Grant White, Alameda, CA

Joseph Woodard, Alameda, CA

Connie Diernisse, Alamo, CA

Ehren Mierau, Alamo, CA

Ana Black, Albany, CA

Lill D, Albany, CA

Christopher Hamilton, Albany, CA

Michael Sullivan, Albany, CA

Lisa Wenzel, Albany, CA

Barbara Williamson, Albany, CA

Dobby Sommer, Albion, CA

Annemarie Weibel, Albion, CA

Tom Atha, Alhambra, CA

Araceli Aviles, Alhambra, CA

Anjanette Caron, Alhambra, CA

David Gallardo, Alhambra, CA

Angel Orona, Alhambra, CA

Christine Sirias, Alhambra, CA

Laurie Barre, Altadena, CA

Vic Bostock, Altadena, CA

Timothy Callahan, Altadena, CA

G Devine, Altadena, CA

Beth Herndobler, Altadena, CA

Jennifer Herstein, Altadena, CA

Venetia Large, Altadena, CA

Annamarie Jones, Alturas, CA

Thomas Mccombs, American Canyon, CA

Robert Raven, American Canyon, CA

Nora Coyle, Anaheim, CA

Shauna Gonzalez, Anaheim, CA

Penelope Harms, Anaheim, CA

Jane Iacovetti, Anaheim, CA

Karen Malley, Anaheim, CA

Tim Maurer, Anaheim, CA

Natalie Blasco, Anderson, CA

Sharon Lieberman, Annapolis, CA

Melissa Brooks, Antelope, CA

Jessica Mitchell-Shihabi, Antelope, CA

John Nadolski, Antelope, CA

Leslie Clement, Antioch, CA

Lindsey Kalfsbeek, Antioch, CA

Dennis Cajas, Apple Valley, CA

Julia Deasley, Apple Valley, CA

Val Wren, Apple Valley, CA

Carol Easton, Aptos, CA

Michele Faia, Aptos, CA

Bonnie Gessler, Aptos, CA

Blaise Brockman, Arcadia, CA

Jana Harker, Arcadia, CA

Penn Patton, Arcadia, CA

Richard Wightman, Arcadia, CA

Jeannie Gunn, Arcata, CA

Connie Lindgren, Arcata, CA

Rudy Ramp, Arcata, CA

Sophie Rocheleau, Arcata, CA

Jane Spini, Arcata, CA

Kimberly Tays, Arcata, CA

Mary Finch, Aromas, CA

Barbara Frances, Aromas, CA

Paul Lapidus, Aromas, CA

Sherry Pennell, Aromas, CA

Mary Orcutt, Arroyo Grande, CA

Verona Rebow, Arroyo Grande, CA

Mary Simmons, Arroyo Grande, CA

Mitchell Falkenstern, Atascadero, CA

Tara Gonzales, Atascadero, CA

Helena Hernandez, Atascadero, CA

Kathleen Van Every, Atascadero, CA

Gabriele Miatkowski, Athens, CA

Marilyn Barthelow, Auburn, CA

Jana Boccalon, Auburn, CA

Kermit Carraway, Auburn, CA

Denise Redden, Auburn, CA

Shawn Jones, Avila Beach, CA

Jere Wilkerson, Avila Beach, CA

Silvia Rocha, Azusa, CA

Linda Alvarado, Bakersfield, CA

Jim Carnal, Bakersfield, CA

Jennifer Cartwright, Bakersfield, CA

Caryn Cowin, Bakersfield, CA

Maria Guzman, Bakersfield, CA

Steve Isenman, Bakersfield, CA

Judy Matusz, Bakersfield, CA

Tracy McCowan, Bakersfield, CA

Steve Sketo, Bakersfield, CA

Yolanda Berumen, Baldwin Park, CA

Jesse Calderon, Baldwin Park, CA

Khai Hang, Baldwin Park, CA

Vicki Sarnecki, Bangor, CA

Christopher Jennings, Banning, CA

Geneva Sherwood, Banning, CA

Linda Christenson, Beaumont, CA

Jon Sheehan, Bell Gardens, CA

Joan Alexander, Bellevue, CA

Yazmin Gonzalez, Bellflower, CA

Dennis Landi, Bellflower, CA

Jason Nolasco, Bellflower, CA

Andrea Kevech, Belmont, CA

Angela Gantos, Belvedere Tiburon, CA

Barbara Meislin, Belvedere Tiburon, CA

Janie Burkhart, Ben Lomond, CA

Nancy Phillips, Ben Lomond, CA

Sarah Holder, Benicia, CA

Robert Quarrick, Benicia, CA

Rudy Zeller, Benicia, CA

Mimi Abers, Berkeley, CA

Inger Acking, Berkeley, CA

Rory Alden, Berkeley, CA

Joan Andersson, Berkeley, CA

Steve Berman, Berkeley, CA
James Blakly, Berkeley, CA
Wendy Brown, Berkeley, CA
Waltraud Buckland, Berkeley, CA
Lynda Caesara, Berkeley, CA
Jenny Collins, Berkeley, CA
Janis Dairiki, Berkeley, CA
Saraswathi Devi, Berkeley, CA
Wendy Diamond, Berkeley, CA
Jonathan Eden, Berkeley, CA
Christopher Evans, Berkeley, CA
Mike Evans, Berkeley, CA
Ellen Franzen, Berkeley, CA
Rachel Gordon, Berkeley, CA
Caryn Graves, Berkeley, CA
Paul Gruber, Berkeley, CA
Stefanie Guynn, Berkeley, CA
D.H. Higgins, Berkeley, CA
Andrea Horbinski, Berkeley, CA
Kimi Hosoume, Berkeley, CA
Maggie Hughes, Berkeley, CA
Richard Huss, Berkeley, CA
Tasha Isolani, Berkeley, CA
Kate Kirkhuff, Berkeley, CA
Lola Leeman, Berkeley, CA
Robert Magarian, Berkeley, CA
Rachel Mayeda, Berkeley, CA
David Miotke, Berkeley, CA
Elaine Parker, Berkeley, CA
Dale Peterson, Berkeley, CA

Tawny Reynolds, Berkeley, CA
Bob Schildgen, Berkeley, CA
Wendy Stock, Berkeley, CA
Linda Tiffany, Berkeley, CA
Paul Vesper, Berkeley, CA
Jonathan Weinstock, Berkeley, CA
Stephanie Wellemeyer, Berkeley, CA
Suzanne Wood, Berkeley, CA
Scott Nelson, Bethel Island, CA
Michelle Arc, Beverly Hills, CA
Val Barri, Beverly Hills, CA
Suzi Beaton, Beverly Hills, CA
Meike Blanc, Beverly Hills, CA
Elizabeth Bona, Beverly Hills, CA
Verna Dentrey, Beverly Hills, CA
Antoinette Dusaid, Beverly Hills, CA
Sara Gernsbacher, Beverly Hills, CA
Sofia Hallgren, Beverly Hills, CA
Helen Hearfield, Beverly Hills, CA
Julia Ivanova, Beverly Hills, CA
Valeria Kobzak, Beverly Hills, CA
Kare M, Beverly Hills, CA
Rick Moffat, Beverly Hills, CA
Troy Munn, Beverly Hills, CA
Peter Nielsen, Beverly Hills, CA
Heather Parekh, Beverly Hills, CA
Allison Rensch, Beverly Hills, CA
Ken Rosen, Beverly Hills, CA
Craig Thompson, Big Bar, CA
Nancy Freedland, Big Bear City, CA

Karen Roseme, Bishop, CA

Barbara Inyan, Blairsden Graeagle, CA

Antonia Chianis, Blue Jay, CA

Pamela Dornfeld, Bodega Bay, CA

Robert Mizar, Bodega Bay, CA

Tina Ann, Bolinas, CA

Rene Flores, Bonita, CA

Leif Kristiansen, Bonita, CA

Cynthia McMath, Boonville, CA

Cristina Warren, Borrego Springs, CA

Ed Atkins, Boulder Creek, CA

Marivee Frayer, Boulder Creek, CA

Sally Fuess, Boulder Creek, CA

Karen Hillery, Boulder Creek, CA

Diane Knipe, Boulder Creek, CA

Kathryn St. John, Boulder Creek, CA

Ann Thryft, Boulder Creek, CA

Lynn Sentenn, Brea, CA

Donna Buessing, Brentwood, CA

Stephanie Glatt, Buellton, CA

D. Fachko, Buena Park, CA

Jennifer Jerlstrom, Buena Park, CA

Jessica Likens, Buena Park, CA

Nelson Molina, Buena Park, CA

Ruxandra Caranfil, Burbank, CA

Sandra Christopher, Burbank, CA

Chantal Dinnage, Burbank, CA

Olga D Grovic, Burbank, CA

Artineh Havan, Burbank, CA

Laura Herndon, Burbank, CA

Rhonda Kess, Burbank, CA

Lotti Knowles, Burbank, CA

Susan Magnus, Burbank, CA

Tyson Martin, Burbank, CA

William Mead, Burbank, CA

Tom Pitman, Burbank, CA

Ben Anderson, Burlingame, CA

Kendra Knight, Burlingame, CA

Amy Liebman, Burlingame, CA

Sam Morrison, Burlingame, CA

Laura Overmann, Burlingame, CA

Brent Woolsey, Burlingame, CA

Vivian Deutsch, Calabasas, CA

Beth Doshay, Calabasas, CA

Monica Wiesener, Calabasas, CA

David Burtis, Calistoga, CA

Scott Hester, Calistoga, CA

Macella O'Neill, Calistoga, CA

Susan Beil, Camarillo, CA

Grace Cunningham, Camarillo, CA

Jeanette Desmond, Camarillo, CA

Cherie Garrett, Camarillo, CA

Tim Guisinger, Camarillo, CA

Susan Kittinger, Camarillo, CA

John Randle, Camarillo, CA

Charlie Tetoni, Camarillo, CA

Allyson Dallmann, Cambria, CA

Julianne Dunkley, Cambria, CA

Janice E. Farry-Menke, Cambria, CA

Glenda Griffith, Cambria, CA

Lisa McGurrin, Cambria, CA
Katherine Bossange, Campbell, CA
Barbara Mason, Campbell, CA
Louise Perry, Campbell, CA
Anne Swanson, Campbell, CA
Judy Wang, Campbell, CA
George Steinitz, Campo, CA
Mark Giordani, Canoga Park, CA
Alan Johnson, Canoga Park, CA
Sheila Winston, Canoga Park, CA
Lynda Cook, Canyon Country, CA
Ramona Agin, Canyonville, CA
Tim Ryan, Capistrano Beach, CA
Matt Bender, Cardiff by the Sea, CA
Mercedes Benet, Carlsbad, CA
Angie G., Carlsbad, CA
Lois Ingber, Carlsbad, CA
Phyllis Lackey, Carlsbad, CA
Erica Murray, Carlsbad, CA
Alexa Pallas, Carlsbad, CA
Michael Parry, Carlsbad, CA
Avi Shaprut, Carlsbad, CA
Peter Brickey, Carmel, CA
Alyce Foster, Carmel, CA
Diana North, Carmel, CA
Lonni Trykowski, Carmel, CA
Julie Dalton, Carmel by the Sea, CA
Elizabeth Adan, Carmichael, CA
Nancy Bukowski, Carmichael, CA
Warren Hageman, Carmichael, CA

Lori Hubbard, Carnation, CA
Judith Falck-Madsen, Carpinteria, CA
Mary Wiener, Carpinteria, CA
G.Diane Matthews-Marcelin, Carson, CA
Lisa Tyree, Carson, CA
Gloria Aguirre, Castaic, CA
Michael Ames, Castro Valley, CA
Elisabeth Bathgate, Castro Valley, CA
Patricia Blackwell-Marchant, Castro Valley, CA
Glen Deardorff, Castro Valley, CA
Gina Gatto, Castro Valley, CA
Sue Hall, Castro Valley, CA
Pati Jio, Castro Valley, CA
Kerri McGoldrick, Castro Valley, CA
Reina Robinson, Castro Valley, CA
Greg Rosas, Castro Valley, CA
Pamela Sibley, Castro Valley, CA
Marci Spencer, Castro Valley, CA
Barbara Harper, Castroville, CA
John Hill, Castroville, CA
Sarah Sowambur, Caterham, CA
Phillip Cripps, Cathedral City, CA
Kelly Erwin, Cathedral City, CA
Hilary Simonetti, Cathedral City, CA
Stephanie Hagiwara, Cayucos, CA
Jon Anderholm, Cazadero, CA
Wallace Rhine, Cazadero, CA
James Costello, Ceres, CA
Marie Perry, Ceres, CA
Jon High, Cerritos, CA

Katherine Hsu, Cerritos, CA
James Lindgren, Cerritos, CA
Cristel Cruz, Chatsworth, CA
C Deguzman, Chatsworth, CA
Lynette K Henderson, Chatsworth, CA
Sarah Suhich, Chatsworth, CA
Barbara Wasserman, Chatsworth, CA
Garrett Alden, Chico, CA
Paul Belz, Chico, CA
Linda Calbreath, Chico, CA
Grace Dewar, Chico, CA
Kylee Smith, Chico, CA
Steve Wolfe, Chico, CA
Terrie Maguire, Chino, CA
Cindy Chic, Chino Hills, CA
Cyndee Gannon, Chino Hills, CA
Angela Barbee, Chula Vista, CA
John Knox, Chula Vista, CA
Alana-Patris Loyer, Chula Vista, CA
Gaby Ramirez, Chula Vista, CA
Alfa Santos, Chula Vista, CA
John Teevan, Chula Vista, CA
Carol Von Sederholm, Chula Vista, CA
Robbin Christensen, Citrus Heights, CA
Sharon Hawkinson, Citrus Heights, CA
Callie Riley, Citrus Heights, CA
Laura Riley, Citrus Heights, CA
Brandy Schumacher, Citrus Heights, CA
Robert Blackey, Claremont, CA
Robert Ellwood, Claremont, CA

Karen Lull, Claremont, CA
Tanya Nieri, Claremont, CA
Laurel Tucker, Claremont, CA
Erica Tyron, Claremont, CA
Kathleen Love, Clearlake, CA
Trina Bodine, Cloverdale, CA
John Kwiatkowski, Cloverdale, CA
Barbara Matz, Cloverdale, CA
Cara Barnhill, Clovis, CA
Gail Blank, Coarsegold, CA
Dianna Suarez, Colfax, CA
Diane Hestich, Colton, CA
Shakayla Thomas, Compton, CA
Sheila Dixon, Concord, CA
Jennie Richards Jacob Blei, Concord, CA
Eugene Jung, Concord, CA
Susan King, Concord, CA
Lisa Maker, Concord, CA
James R Monroe, Concord, CA
Lynette Ridder, Concord, CA
Scott Tipton, Concord, CA
Carlene Visperas, Concord, CA
Bonnie W, Concord, CA
Emily Wheeler, Concord, CA
Shari Wildschutte, Concord, CA
Jane Bidinian, Cool, CA
Anne Spesick, Cool, CA
Joseph White, Cool, CA
Christina G, Corona, CA
Valerie Pelletier, Corona, CA

Donna Crossman, Coronado, CA
Sanja Dimitrijevic, Coronado, CA
Rhys Atknsn, Corte Madera, CA
Jennifer Lawson, Corte Madera, CA
Abigail Millikan States, Corte Madera, CA
Elaina Caner, Costa Mesa, CA
Rachel Cox, Costa Mesa, CA
Michelle Fay, Costa Mesa, CA
Jacqueline Gait, Costa Mesa, CA
F. Carlene Reuscher, Costa Mesa, CA
Megan Snipes, Costa Mesa, CA
Lizzie Vierra, Costa Mesa, CA
Jane Lyon, Cotati, CA
Kelley Rico, Cottonwood, CA
Amanda Felt, Covina, CA
Wendy Monterrosa, Covina, CA
Sandy Williams, Covina, CA
Elli Kimbauer, Crescent City, CA
Paul Norup, Crescent City, CA
April Quigley, Crescent City, CA
Ronald Thompson, Crescent City, CA
Susannah Baxendale, Culver City, CA
Jane Nadeau, Culver City, CA
Brian Rutkin, Culver City, CA
Vj Waks, Culver City, CA
Peg Albrets, Cupertino, CA
Robert Jardine, Cupertino, CA
Helen Graham, Cypress, CA
Patricia Rudner, Cypress, CA
Rachel Abdel, Daly City, CA

Jeff Garner, Daly City, CA
Randy Gerlach, Daly City, CA
Noah H, Daly City, CA
Ramsey Jammal, Daly City, CA
Elena Orozco, Daly City, CA
Joanne Scott, Daly City, CA
Katya Siguenza, Daly City, CA
Diana Sutton, Daly City, CA
Mark Weinberger, Daly City, CA
Cheryl McCarthy, Dana Point, CA
Rick Edmondson, Danville, CA
Ramona Williams, Danville, CA
Sabrina Wong, Danville, CA
Christine K. Adams, Davis, CA
Philip Cooper, Davis, CA
Kristen Douglas, Davis, CA
Jon Erickson, Davis, CA
Sherrill Futrell, Davis, CA
Nancy Hiestand, Davis, CA
Autumn Marr, Davis, CA
Jack Milton, Davis, CA
Diane Moore, Davis, CA
Sherri Sandberg, Davis, CA
Nicole Slaton, Davis, CA
Elizabeth Hennessy Kyle, Del Mar, CA
Carol Kerridge, Del Mar, CA
Bea Cohen, Desert Hot Springs, CA
Maureen Mcdonald, Desert Hot Springs, CA
Michael McLaughlin, Desert Hot Springs, CA
Nancy Schelling, Desert Hot Springs, CA

Sarah Sultana, Desert Hot Springs, CA
Marilyn Eng, Diamond Bar, CA
Jeffrey Jenkins, Diamond Bar, CA
Seth Picker, Diamond Springs, CA
Melissa Villarreal, Dinuba, CA
Denise Russo, Discovery Bay, CA
Valerie Victorino, Discovery Bay, CA
Dan Vasile, Dodgertown, CA
Sharon Byers, Downey, CA
Michelle Fox, Downey, CA
Ivan Llata, Downey, CA
Dean Peppard, Downey, CA
Anna Armstrong, Duarte, CA
Sarah Sismondo, Duarte, CA
Juliet Flores, Dublin, CA
Nancy Nilssen, Dublin, CA
Jean Olds, Dublin, CA
Mohan Sakhrani, Dublin, CA
Anthony Totaro, Dublin, CA
Richard Harden, El Cajon, CA
Kim Koch, El Cajon, CA
Linda Martin, El Cajon, CA
Susan Hampton, El Cerrito, CA
Paul Hughes, El Cerrito, CA
Jan Jones, El Cerrito, CA
Michael Kenney, El Cerrito, CA
Robert Naumann, El Cerrito, CA
Carole Sartenaer, El Cerrito, CA
Anne Tuddenham, El Cerrito, CA
Cory Anttila, El Dorado Hills, CA

Mary Foley Foley, El Dorado Hills, CA
Karen Miner, El Dorado Hills, CA
Dorothy Pasquinelli, El Granada, CA
Susie Rose Tempesta, El Granada, CA
Terry Blount, El Segundo, CA
Matthew Lubs, El Segundo, CA
Stacy Smith, El Segundo, CA
Bruce Wimberley, El Segundo, CA
Martha Booz, El Sobrante, CA
Garth Casaday, El Sobrante, CA
Dan Cooley, El Sobrante, CA
Natasha Kaluza, El Sobrante, CA
Marsha Lowry, El Sobrante, CA
John Carroll, Elk Grove, CA
Donna Giddens, Elk Grove, CA
Shannon Kemena, Elk Grove, CA
Sumita Khanna, Elk Grove, CA
Carol Leuenberger, Elk Grove, CA
Vivian Leung, Emeryville, CA
Kaylah Sterling, Emeryville, CA
Tara A. Birnbaum, Encinitas, CA
June Evans, Encinitas, CA
Shawn Johnson, Encinitas, CA
Barbara Mintz, Encinitas, CA
Felicia Chase, Encino, CA
Lucy Hart, Encino, CA
Hillary Ostrow, Encino, CA
Andrew Russell, Encino, CA
Michael Tullius, Encino, CA
Brenda Bergstrom, Escondido, CA

Dale Crawford, Escondido, CA

Cindy Dupray, Escondido, CA

Candace Galvez, Escondido, CA

Deborah Iannizzotto, Escondido, CA

John Pasqua, Escondido, CA

Erika Porter, Escondido, CA

Peter Randolph, Escondido, CA

Ken Sanford, Escondido, CA

Joanne Tenney, Escondido, CA

Andy Tomsy, Escondido, CA

Rena Zaman-Zade, Escondido, CA

Kevin Goodwin, Eureka, CA

Mary Hurley, Eureka, CA

Edward Macan, Eureka, CA

Lynda McDaniel, Eureka, CA

Karynn Merkel, Eureka, CA

Gina Ness, Eureka, CA

Davin Peterson, Eureka, CA

Anne Pierson, Eureka, CA

Graciela Ramirez, Eureka, CA

Karen Steele, Eureka, CA

Susan Tatro, Eureka, CA

Beti Webb Trauth, Eureka, CA

Don W, Eureka, CA

C Emerson, Fair Oaks, CA

Dean Griswold, Fair Oaks, CA

Steven Holzberg, Fair Oaks, CA

John J McLaughlin Jr, Fair Oaks, CA

Sheila Nason, Fair Oaks, CA

James Sherrel, Fair Oaks, CA

Jeanne Carlson, Fairfax, CA

Cindi Darling, Fairfax, CA

Kathleen Jackson, Fairfax, CA

Gary Mononi, Fairfax, CA

Vakila ter Veld, Fairfax, CA

Samuel Durkin, Fairfield, CA

Mark Edgren, Fairfield, CA

Veronica Michael, Fairfield, CA

Jean Riehl, Fairfield, CA

Todd Musto, Fallbrook, CA

Alice Kelly, Felton, CA

Jim Franzi, Fiddletown, CA

S. Johnson, Fillmore, CA

David Brooks, Folsom, CA

Jessica Dardarian, Folsom, CA

Joan Normington, Folsom, CA

Julie Osborn, Folsom, CA

Benjamin Billhardt, Fontana, CA

James Kawamura, Fontana, CA

Trina Aurin, Foothill Ranch, CA

Janet Ju, Foothill Ranch, CA

Bob Flagg, Forestville, CA

Robert Harrison, Forestville, CA

Gilia Humrich, Forestville, CA

Eric Johnson, Fort Bragg, CA

Bill Lundeen, Fort Bragg, CA

Gary Warner, Fort Jones, CA

Dave Lyons, Fortuna, CA

Ray Bartlett, Fountain Valley, CA

Moktar Salama, Fountain Valley, CA

Mary Brooks, Frazier Park, CA

Catherine Stansell, Frazier Park, CA

Monique Soares, Freedom, CA

Elaine Chung, Fremont, CA

Lacey Hicks, Fremont, CA

Jennifer King, Fremont, CA

Janet Klein, Fremont, CA

David Lanker, Fremont, CA

Vince Lindain, Fremont, CA

Charles Modjeski, Fremont, CA

Meera P, Fremont, CA

Sharon Rodrigues, Fremont, CA

Christopher Ware, Fremont, CA

Christine Anderson, Fresno, CA

Michael Bordenave, Fresno, CA

Kyla Esqueda, Fresno, CA

Britani German, Fresno, CA

Robert Glover, Fresno, CA

Evelyn Johnson-Todd, Fresno, CA

Andrew Jones, Fresno, CA

Francine Keohi, Fresno, CA

Shawn Martinez, Fresno, CA

Nancy McCormick, Fresno, CA

John Poss, Fresno, CA

Jacquelyn Riley, Fresno, CA

Haidie Simonet, Fresno, CA

Monica Yonangitti, Fresno, CA

John Ayala, Fullerton, CA

Donna Grampp, Fullerton, CA

Melodi Gulsen, Fullerton, CA

Lynn Hoang, Fullerton, CA

Winifred Hopkins, Fullerton, CA

Jaclyn Joy Lewis, Fullerton, CA

Evan McDermit, Fullerton, CA

Kent Morris, Fullerton, CA

Christine Doyka, Garberville, CA

Evelyn Ahumada, Garden Grove, CA

Laurie Kinnings, Garden Grove, CA

Dana May, Garden Grove, CA

Carol Tennyson, Garden Grove, CA

Deborah Burge, Garden Valley, CA

Suellen Carroll, Garden Valley, CA

Jennifer Walters, Gardena, CA

Deb Conant, Gilroy, CA

Lynne Long, Gilroy, CA

Carol Stafford, Gilroy, CA

Eleanor Decker, Glen Ellen, CA

Alejandro Artigas, Glendale, CA

A C, Glendale, CA

Carole Cooper, Glendale, CA

Barbara Cunningham, Glendale, CA

Lisa Deines, Glendale, CA

Claudia Hasenhuttl, Glendale, CA

Susi Higgins, Glendale, CA

Peter Hogan, Glendale, CA

Anita Liao, Glendale, CA

J. D. Lombardi, Glendale, CA

Jenette Paisley, Glendale, CA

Jeff Pollak, Glendale, CA

Victoria Shepherd, Glendale, CA

Rebecca Barker, Glendora, CA

Larissa Shen, Glendora, CA

Adriene Stutrud, Glenhaven, CA

Michael Beickel, Goleta, CA

Catherine Dishion Dishion, Goleta, CA

Amanda Heinrich, Goleta, CA

Martin Henderson, Goleta, CA

Kathy Kosinski, Goleta, CA

Patricia Moreno, Goleta, CA

Randall Parada, Goleta, CA

Z. Reisz, Goleta, CA

Joanna Tang, Goleta, CA

Dennis Hammermeister, Granada Hills, CA

Lisa Hammermeister, Granada Hills, CA

John Shell, Granada Hills, CA

Berna & Mark Nitzberg, Granite Bay, CA

Evette Andersen, Grass Valley, CA

Susanne Bader, Grass Valley, CA

Bonny Davis, Grass Valley, CA

Anna Drummond, Grass Valley, CA

John Everett, Grass Valley, CA

Steven Millard, Grass Valley, CA

Patricia Phillips, Grass Valley, CA

Robin Resovich, Grass Valley, CA

James Yonts, Graton, CA

Dixie Brown, Greenbrae, CA

Gordon Ehrman, Greenbrae, CA

Dennis McVey, Greenbrae, CA

Jill Mistretta, Greenbrae, CA

Joan Smith, Greenbrae, CA

Mark Escajeda, Gualala, CA

Querido Galdo, Gualala, CA

Teresa Bowden, Guerneville, CA

Russell Burke, Guerneville, CA

Kimo Cochran, Guerneville, CA

Andrea Kaufman, Guerneville, CA

Marilyn Wolters, Guerneville, CA

Arleen Zuniga, Guerneville, CA

Charles Elliott, Hacienda Heights, CA

Jean Howe, Hacienda Heights, CA

Michael Wisniewski, Hacienda Heights, CA

Debby Dernberger, Half Moon Bay, CA

Mariaelena Springsted, Half Moon Bay, CA

Amy Squires, Hawthorne, CA

Kelly Andrada, Hayward, CA

Gregory Fite, Hayward, CA

H. Gray, Hayward, CA

Rev. Jonathan Tan, Hayward, CA

Maria Daverede, Healdsburg, CA

Tessa Kraft, Healdsburg, CA

Elizabeth Rue, Healdsburg, CA

Ernst Mecke, Helsingfors, CA

Teresa Hensley, Hemet, CA

Larry LaPointe, Hemet, CA

Lily Mejia, Hemet, CA

Diane Schnitzer, Hemet, CA

Debra Shaw, Hemet, CA

Carson Yu, Hercules, CA

William Briggs, Hermosa Beach, CA

Margaret Harrell, Hermosa Beach, CA

Linda Monosmith, Hermosa Beach, CA
Tammyfa Fait, Hesperia, CA
Julie Knutson, Hesperia, CA
Annie Phillips, Hesperia, CA
Shanna Rojas, Hesperia, CA
Juanita Westberg, Hesperia, CA
P Perry, Hidden Valley Lake, CA
Linda Albarran, Highland, CA
Vanessa Kong, Hillsborough, CA
Michael Henderson, Huntington Beach, CA
Vicki Hughes, Huntington Beach, CA
Audrey Mannolini, Huntington Beach, CA
Michael McMahan, Huntington Beach, CA
Polly D Pitsker, Huntington Beach, CA
Fred Schloessinger, Huntington Beach, CA
Sheila Shane, Huntington Beach, CA
Enel Taylor, Huntington Beach, CA
Stacie Umetsu, Huntington Beach, CA
Elijah L., Huntington Park, CA
Sylvia Cardella, Hydesville, CA
Jaimy Sprissler, Imperial Beach, CA
Jayne Cerny, Inverness, CA
Terri Mckown, Inyokern, CA
Lorena Cox, Irvine, CA
Sarah Hoenicke, Irvine, CA
Lisa Paynemiller, Irvine, CA
Tracy Shortle, Irvine, CA
Shana Van Meter, Irvine, CA
Teresita Vanderdys, Irvine, CA
Robin Weirich, Irvine, CA

Kelli Zusho, Irvine, CA
Mary Adams, Jackson, CA
J Cole, Joshua Tree, CA
Cody Dolnick, Joshua Tree, CA
Rob Barnes, Junction City, CA
Keith Christy, Jurupa Valley, CA
Vanessa Aguiar, Kelseyville, CA
Janet Parks, Kensington, CA
Greg Nowell, Kenwood, CA
Meghan Behm, Kings Beach, CA
Gil Gaus, Kings Beach, CA
Tom Feldman, La Canada Flintridge, CA
John Hale, La Canada Flintridge, CA
LouAnne Insprucker, La Canada Flintridge, CA
Lisa Gee, La Crescenta, CA
Heather Parker, La Crescenta, CA
Barbara Poland, La Crescenta, CA
Linda Triplett, La Honda, CA
Susan Mc Candless, La Jolla, CA
Suzi McCandless, La Jolla, CA
Elizabeth Oliver, La Jolla, CA
Winke Self, La Jolla, CA
Jenn Crum, La Mesa, CA
Jacoba Dolloff, La Mesa, CA
Judith Edwards, La Mesa, CA
Arthur Fink, La Mesa, CA
Steve Gross, La Mesa, CA
Dan and Lilly Kittredge, La Mesa, CA
Deborah Lancman, La Mesa, CA
Cynthia McHugh, La Mesa, CA

Barbara Speidel, La Mesa, CA
Michael LaNoue, La Mirada, CA
Terrance Hutchinson, La Quinta, CA
Claudia Monahan, La Quinta, CA
Melissa Williams, La Quinta, CA
Susan Steube-Nordine, La Verne, CA
Jean Dimler, Ladera Ranch, CA
Katie Yu, Ladera Ranch, CA
Lisa Brahney, Lafayette, CA
Aaron Chan, Lafayette, CA
Nancy Hartman, Lafayette, CA
Lucinda Henderson, Lafayette, CA
Torunn Sivesind, Lafayette, CA
Blake Wu, Lafayette, CA
Patricia Appel, Laguna Beach, CA
Jo Baxter, Laguna Beach, CA
Suzy Capano, Laguna Beach, CA
Tiffany Casler, Laguna Beach, CA
Stacy Cornelius, Laguna Beach, CA
Anne Earhart, Laguna Beach, CA
Mirjam Luthe, Laguna Beach, CA
Robert Reed, Laguna Beach, CA
Sally Sanders, Laguna Beach, CA
Gila Wdowinski, Laguna Beach, CA
Connie Loveland, Laguna Hills, CA
Patti Mickelsen, Laguna Hills, CA
Lynne Jeffries, Laguna Niguel, CA
Erik Kemper, Laguna Niguel, CA
Melissa Waters, Laguna Niguel, CA
Maria Faur, Laguna Woods, CA

Richard Miller, Laguna Woods, CA
Kevin O'Brien, Laguna Woods, CA
Miriam Adler, Lake Balboa, CA
Travis Benneian, Lake Elsinore, CA
Kathy Engstrom, Lake Elsinore, CA
Kathy Monteleone, Lake Elsinore, CA
Julie Pearce, Lake Forest, CA
Linda Schulz, Lake Hughes, CA
Patrick Bernardino, Lakeside, CA
Mary Hicklin, Lakeside, CA
Irene Roos, Lakeside, CA
Michael Broad, Lakewood, CA
Leslie Gombrich, Lakewood, CA
Brenda Lee, Lakewood, CA
Margaret Tollner, Lakewood, CA
Kae Bender, Lancaster, CA
Suzanne Marcella Camarillo, Lancaster, CA
Stephanie Dennis, Lancaster, CA
Julia Ritter, Larkspur, CA
Valerie Nordeman, Laytonville, CA
Sharon Paltin, Laytonville, CA
Charlotte Randolph, Lee Vining, CA
Cynthia Brooks-Fetty, Lemon Grove, CA
Ked Garden, Lemon Grove, CA
Lisa Avila, Lincoln, CA
Nicole Fountain, Lincoln, CA
Sandy McFarlin, Lincoln, CA
Paula Cavagnaro, Livermore, CA
Jean King, Livermore, CA
Caroline Ko, Livermore, CA

Sally Marone, Livermore, CA

Todd Matz, Livermore, CA

Mary Perner, Livermore, CA

Laurie Sargent, Livermore, CA

Sarah Ryan, Liverpool, CA

Mari Dominguez, Lodi, CA

Elizabeth Eisenbeis, Lodi, CA

Kris Cordova, Loma Linda, CA

John Waller, Lompoc, CA

Donna Apodaca, Long Beach, CA

Kevin Bigelow, Long Beach, CA

Ian Bixby, Long Beach, CA

Frederick Cliver, Long Beach, CA

Erlinda Cortez, Long Beach, CA

Kurt Cruger, Long Beach, CA

Marie DiMassa, Long Beach, CA

Lee Eames, Long Beach, CA

Malina H, Long Beach, CA

Brenda Haig, Long Beach, CA

Rebecca Hanna, Long Beach, CA

Douglas Herrera, Long Beach, CA

Diana Kliche, Long Beach, CA

Andrew Kort, Long Beach, CA

Linda Lloyd, Long Beach, CA

Charles Lotstein, Long Beach, CA

Jane Mitchell, Long Beach, CA

Greg Perkins, Long Beach, CA

Melissa Rondilla, Long Beach, CA

Janice Sampson, Long Beach, CA

Lance Smith, Long Beach, CA

Michele Souza Zimmerman, Long Beach, CA

Melinda Taylor, Long Beach, CA

Daniel Wilkinson, Long Beach, CA

Marion Barry, Loomis, CA

Dawn Forcier, Loomis, CA

Jennifer Brooks, Los Altos, CA

Kinshuk Govil, Los Altos, CA

R. Marks, Los Altos, CA

James Patton, Los Altos, CA

Stephanie Reader, Los Altos, CA

Steven Acosta, Los Angeles, CA

Judith Antin, Los Angeles, CA

Valerie Apple, Los Angeles, CA

Soraya Barabi, Los Angeles, CA

Ann Bein, Los Angeles, CA

Jon Benneian, Los Angeles, CA

Adam Bernstein, Los Angeles, CA

Vicki Bingo, Los Angeles, CA

Paula Block-Levor, Los Angeles, CA

Deirdre Boland, Los Angeles, CA

Fabienne Bouville, Los Angeles, CA

Andrea Boyle, Los Angeles, CA

Jason Brock, Los Angeles, CA

Damon Brown, Los Angeles, CA

Robert Burk, Los Angeles, CA

Frank Burke, Los Angeles, CA

Ariel Chapman, Los Angeles, CA

William Cleary, Los Angeles, CA

Amber Cohn, Los Angeles, CA

John Crahan, Los Angeles, CA

Joseph Dadgari, Los Angeles, CA
Diana Davidson, Los Angeles, CA
Ellen Davis, Los Angeles, CA
Lesly Derbyshire, Los Angeles, CA
John DesJardin, Los Angeles, CA
Laura Divenere, Los Angeles, CA
Robert Drummond, Los Angeles, CA
Isabelle Du Soleil, Los Angeles, CA
Chris Eaton, Los Angeles, CA
Jason Eric, Los Angeles, CA
Gail Farina, Los Angeles, CA
Aixa Fielder, Los Angeles, CA
Alexander Fierro-Clarke, Los Angeles, CA
Thomas Fitzgerald, Los Angeles, CA
Sara Flamm, Los Angeles, CA
Reanna Flores, Los Angeles, CA
Darren Frale, Los Angeles, CA
Mark Gallegos, Los Angeles, CA
Kay Gallin, Los Angeles, CA
Julie Garcia, Los Angeles, CA
Enrica Gaspari, Los Angeles, CA
Patricia Gavigan, Los Angeles, CA
Janna Gelfand, Los Angeles, CA
Karen Ruth Getchell, Los Angeles, CA
Mary Glazer, Los Angeles, CA
Prisca Gloor, Los Angeles, CA
Luna Gooding, Los Angeles, CA
Carol Gordon, Los Angeles, CA
Steve Graff, Los Angeles, CA
Susan Grant, Los Angeles, CA

emma-louise hayley, Los Angeles, CA
Carla Holguin, Los Angeles, CA
Celeste Hong, Los Angeles, CA
Ted Hume, Los Angeles, CA
Elizabeth Johansen, Los Angeles, CA
Saran K., Los Angeles, CA
Kaija Keel, Los Angeles, CA
Sabrina Kemeny, Los Angeles, CA
Schuyler Kent, Los Angeles, CA
Mha Atma S Khalsa, Los Angeles, CA
Leslie Klein, Los Angeles, CA
Shirlee Kong, Los Angeles, CA
Anita Kuhn, Los Angeles, CA
David Kurz, Los Angeles, CA
Diane Lamont, Los Angeles, CA
Edward Landler, Los Angeles, CA
Kenneth Lapointe, Los Angeles, CA
Seth Laursen, Los Angeles, CA
Yolanda Leaird, Los Angeles, CA
Barbara Leake, Los Angeles, CA
Patricia Lewis, Los Angeles, CA
Andrea Lieberman, Los Angeles, CA
Adrian Loeb, Los Angeles, CA
Alexandria Luostari, Los Angeles, CA
John-Allan Macunovich, Los Angeles, CA
Pamela Magathan, Los Angeles, CA
Eugene Majerowicz, Los Angeles, CA
Stephen Markel, Los Angeles, CA
Tina Markowe, Los Angeles, CA
Patricia Marlatt, Los Angeles, CA

Mary McAuliffe, Los Angeles, CA

Alexandra McCardell, Los Angeles, CA

Karen McCaw, Los Angeles, CA

Robert Meier, Los Angeles, CA

Myron Meisel, Los Angeles, CA

Tony Mendoza, Los Angeles, CA

Barbara Mesney, Los Angeles, CA

Helen Miller, Los Angeles, CA

Deimile Mockus, Los Angeles, CA

Maria Molund, Los Angeles, CA

Erica Munn, Los Angeles, CA

Joan Murray, Los Angeles, CA

Melvyn Nefsky, Los Angeles, CA

Frank Ortiz, Los Angeles, CA

Maaya Ota, Los Angeles, CA

Attilio Pandolfo, Los Angeles, CA

Margaret Phelps, Los Angeles, CA

Patti Pimento, Los Angeles, CA

Samuel Popailo, Los Angeles, CA

Kalpana Pot, Los Angeles, CA

Louis Priven, Los Angeles, CA

Brianda Puig, Los Angeles, CA

Sara Rabbani, Los Angeles, CA

Joseph Rinaldo, Los Angeles, CA

Araeia Robinson, Los Angeles, CA

Candace Rocha, Los Angeles, CA

Roni Rogers, Los Angeles, CA

Flora Rosas, Los Angeles, CA

Rina Rubenstein, Los Angeles, CA

Nicholas Rulli, Los Angeles, CA

Susan Ryan, Los Angeles, CA

Dalia Salgado, Los Angeles, CA

Antoinette Samardzic, Los Angeles, CA

Tom Sanchez, Los Angeles, CA

Benjamin Schlau, Los Angeles, CA

Mariam Shah-Rais, Los Angeles, CA

Joshua Stamberg, Los Angeles, CA

Mark Stannard, Los Angeles, CA

Neal Steiner, Los Angeles, CA

Audrey Stern, Los Angeles, CA

Stephen Stone, Los Angeles, CA

Patricia Strauss, Los Angeles, CA

Laura Strom, Los Angeles, CA

Amy Sullivan, Los Angeles, CA

Janice Tanaka, Los Angeles, CA

Tevet Tee, Los Angeles, CA

Cathy Thornburn, Los Angeles, CA

Glenna Traiger, Los Angeles, CA

Ivy Tran, Los Angeles, CA

Tia Triplett, Los Angeles, CA

Craig Tyron, Los Angeles, CA

Kimberly Uchida, Los Angeles, CA

Alexandra Vese, Los Angeles, CA

Virginia Watson, Los Angeles, CA

Lynne Weiske, Los Angeles, CA

R Wells, Los Angeles, CA

Neil Withnall, Los Angeles, CA

Chris Withrow, Los Angeles, CA

Amy Wolfberg, Los Angeles, CA

Kelly Wright, Los Angeles, CA

Mark Yackley, Los Angeles, CA

Kyle Yaskin, Los Angeles, CA

Anita Youabian, Los Angeles, CA

Esther Zepeda, Los Angeles, CA

Jan Albertie, Los Banos, CA

Judy Dutil, Los Gatos, CA

Thomas Ferrito, Los Gatos, CA

Rea Freedom, Los Gatos, CA

Lisa Gherardi, Los Gatos, CA

Theresa Gonzalez, Los Gatos, CA

Ron and Sandra Harder, Los Gatos, CA

Steven Hayashi, Los Gatos, CA

Rick Koury, Los Gatos, CA

Angela LaPlante, Los Gatos, CA

Joyce Schellenberg, Los Gatos, CA

Katie Franklin, Los Osos, CA

Susan S. Jones, Los Osos, CA

Leslie Spoon, Los Osos, CA

Kevin Branstetter, Lotus, CA

Lori White, Lower Lake, CA

Judy Madigan, Loyalton, CA

Yves DeCargouet, Lucerne, CA

Grace Bell, Mablethorpe, CA

Angela Price, Madera, CA

Deborah Collodel, Malibu, CA

Kelly Kessl, Malibu, CA

Lynne Miller, Malibu, CA

Rob Seltzer, Malibu, CA

Louis Spirito, Malibu, CA

Jimmy Tallal, Malibu, CA

Kelly Tiefen, Malibu, CA

Loretta Tiefen, Malibu, CA

Patricia Savage, Mammoth Lakes, CA

D.G. Sifuentes, Mammoth Lakes, CA

Thomas Conroy, Manhattan Beach, CA

Karla Devine, Manhattan Beach, CA

Dan Esposito, Manhattan Beach, CA

Kathleen Goldman, Manhattan Beach, CA

Marisa Landsberg, Manhattan Beach, CA

Alice Neuhauser, Manhattan Beach, CA

Jennifer Yamamoto, Manhattan Beach, CA

James Liu, Manteca, CA

Jim Ricketts, Manteca, CA

MaryAnn Bomarito, Marina, CA

Creda Markham, Marina, CA

Susanne Cumming, Marina Del Rey, CA

Alexander Dunaev, Marina Del Rey, CA

Renee Klein, Marina del Rey, CA

Amanda Skerski, Marina del Rey, CA

Benjamin Teitelbaum, Marina Del Rey, CA

Judith Turner, Marina del Rey, CA

Bobbie Cavazos, Mariposa, CA

Gabriel Sheets, Mariposa, CA

Burney Stephens, Mariposa, CA

Scott Mason, Martinez, CA

Charlotte Sines, Martinez, CA

Betty Mello, Marysville, CA

Denise Comiskey, McKinleyville, CA

Robin Hamlin, McKinleyville, CA

Francesca Ciancutti, Mendocino, CA

Raven Deerwater, Mendocino, CA
John Wozniak, Mendocino, CA
Susan Alpern, Menifee, CA
Rob Gallinger, Menifee, CA
Pam Overholtzer, Menifee, CA
Michael Braude, Menlo Park, CA
Rebecca Eliscu, Menlo Park, CA
Connie Habash, Menlo Park, CA
Vickie Rozell, Menlo Park, CA
Carol Ohsiek, Middletown, CA
Alex Levine, Mill Valley, CA
Liz Marshall, Mill Valley, CA
Roberta Newman, Mill Valley, CA
Norman Pacula, Mill Valley, CA
Marilyn Price, Mill Valley, CA
Leonie Terfort, Mill Valley, CA
Gisella Castelluccio, Millbrae, CA
Jan Castle, Millbrae, CA
Richard Reale, Millbrae, CA
Mary Maher, Milpitas, CA
Denise Henyard, Mira Loma, CA
Rose Kabir, Mira Loma, CA
Rosa Strayer, Mira Loma, CA
Peggy Skomal, Mission Hills, CA
Denise Meadow, Mission Viejo, CA
Rochelle Phillips, Mission Viejo, CA
Carolyn Rhazi, Mission Viejo, CA
Robin Loewen, Modesto, CA
Linda Pemberton, Modesto, CA
Michelle Setaro, Modesto, CA

Christy Bolle, Monrovia, CA
Angela Galgocz, Monrovia, CA
Robert Ricewasser, Monrovia, CA
Heather Crow, Montague, CA
Samuel Dickson, Montara, CA
Jeanette Leinweber, Monte Rio, CA
Kristen Beck, Monterey, CA
Zoe Edington, Monterey, CA
Deb Federin, Monterey, CA
William Hubick, Monterey, CA
Patrick Maiorana, Monterey, CA
Shirley Tofte, Monterey, CA
Fiona Webb, Monterey, CA
Dave Whipple, Monterey, CA
Steve Tuttle, Monterey Park, CA
Karen Drake, Montrose, CA
Cheri Bly, Moorpark, CA
Thomas Filip, Moorpark, CA
Susie Gutowitz, Moorpark, CA
Marti Jurick, Moorpark, CA
Erica Ponce, Moorpark, CA
Art Stclair, Moorpark, CA
Kathryn Choudhury, Moraga, CA
Heidi Groom, Moreno Valley, CA
Christian Reyes, Moreno Valley, CA
Ilya Turov, Moreno Valley, CA
Greg Winton, Moreno Valley, CA
J.T. Averre, Morgan Hill, CA
Daniel Lebus, Morgan Hill, CA
Nannette Morgan, Morgan Hill, CA

Anita Manley, Morro Bay, CA

Tina Wener, Morro Bay, CA

Michelle Santy, Moss Beach, CA

Jim Curland, Moss Landing, CA

Greg D, Mount Shasta, CA

Cynthia Marconi, Mount Shasta, CA

Bill Wood, Mount Shasta, CA

Charles Fletcher, Mountain Center, CA

Caroline Bering, Mountain View, CA

Cyril Bouteille, Mountain View, CA

Christopher Cain, Mountain View, CA

Kermit Cuff, Mountain View, CA

Karin Jeffery, Mountain View, CA

Victoria Keoleian, Mountain View, CA

Ben Martin, Mountain View, CA

Rosa Bravo, Murrieta, CA

Dawn Burrell, Murrieta, CA

Daniel Davis, Murrieta, CA

Loan Nguyen, Murrieta, CA

Arianna Walsh, Murrieta, CA

Janet Wheeler, Murrieta, CA

Elizabeth Woodward, Murrieta, CA

Jan Gates, Napa, CA

Catherine George, Napa, CA

Charesa Harper, Napa, CA

Kathy Linale, Napa, CA

Robyn Little, Napa, CA

Katharine Mawer, Napa, CA

Barry Schwartz, Napa, CA

Evelyn Trevethan, Napa, CA

Susan Wheaton, Napa, CA

Ree Whitford, Napa, CA

Jim Wilson, Napa, CA

Dana Monroe, National City, CA

Micki Besancon, Nevada City, CA

Terry Charonnat, Nevada City, CA

Joan Griffin, Nevada City, CA

Judie Rae, Nevada City, CA

Glenn Smith, Nevada City, CA

Maureen Fry, Newark, CA

John Hawkins, Newbury Park, CA

Percy Hicks-Severn, Newbury Park, CA

Nemo Howton, Newbury Park, CA

Rodney Love, Newbury Park, CA

Joyce McIntire, Newbury Park, CA

Beth Merrill, Newbury Park, CA

Nicole Mikals, Newbury Park, CA

Matthew Page, Newbury Park, CA

Kathleen Pierce, Newbury Park, CA

Tracey Sands, Newbury Park, CA

Cindy Stein, Newbury Park, CA

Heidi Taylor, Newbury Park, CA

Jill Wiechman, Newbury Park, CA

Paula Willebrands, Newbury Park, CA

Kathrine Fegette, Newcastle, CA

Joan Peter, Newhall, CA

Alan Yamamoto, Newhall, CA

Elizabeth Edwards, Newport Beach, CA

Steve Iverson, Newport Beach, CA

Vic Paglia, Newport Beach, CA

Stephanie Aston, North Hills, CA

Janice Baxter, North Hills, CA

Christopher Geukens, North Hills, CA

Marian Gould, North Hills, CA

Jim Leske, North Hills, CA

Heidi Miller, North Hills, CA

Natalie Aharonian, North Hollywood, CA

Marilyn Carney, North Hollywood, CA

Kathleen Culp, North Hollywood, CA

Tracy Elliott, North Hollywood, CA

Fred Granlund, North Hollywood, CA

Larry Jasper, North Hollywood, CA

Cathy Kraus, North Hollywood, CA

Michael Marciano, North Hollywood, CA

Stu Nichols, North Hollywood, CA

Manuela Rollins, North Hollywood, CA

Grace Silva, North Hollywood, CA

Judith Vogelsang, North Hollywood, CA

Roslyn Jones, North Palm Springs, CA

Robert Chirpin, Northridge, CA

Lori Dixon, Northridge, CA

Ann Dorsey, Northridge, CA

Gail Camhi, Novato, CA

Mike Cass, Novato, CA

Hillary Davis, Novato, CA

Ian Dogole, Novato, CA

Gary Dowling, Novato, CA

Bonnie Grossman, Novato, CA

Toni Kim, Novato, CA

Lisa Moreno, Novato, CA

H. S. Nadler, Novato, CA

Robert Ortiz, Novato, CA

Thomas Ray, Novato, CA

Jay Rice, Novato, CA

Sheri Rollison, Novato, CA

Arlene Van Craeynest, Novato, CA

Marilyn Wada, Novato, CA

Greg Mull, Oak View, CA

Tree Wright, Oak View, CA

Claire Chambers, Oakdale, CA

John Fitzpatrick, Oakhurst, CA

Dee Allen., Oakland, CA

Jane Armbruster, Oakland, CA

Clara Bargellini, Oakland, CA

Rachel Beck, Oakland, CA

Richard Behrman, Oakland, CA

Julia Benson, Oakland, CA

Esther Boyd, Oakland, CA

Mary Ann Cramer, Oakland, CA

Judith E, Oakland, CA

Stan Fitzgerald, Oakland, CA

Dr A G, Oakland, CA

Rick Gaston, Oakland, CA

Rogelio Giron, Oakland, CA

Ruby Giron-Carson, Oakland, CA

MaryAnne Glazar, Oakland, CA

John Golding, Oakland, CA

Christiana Hart, Oakland, CA

Susan Herting, Oakland, CA

Sterling Hollins, Oakland, CA

Monika Holm, Oakland, CA

Kuanmei Huang, Oakland, CA

Allison Jones, Oakland, CA

Sara Katz, Oakland, CA

Paul Koehler, Oakland, CA

Laakea Laano, Oakland, CA

Jesus M. Maldonado, Oakland, CA

Heather McHugh, Oakland, CA

Caephren McKenna, Oakland, CA

Vasu Murti, Oakland, CA

April Parkins, Oakland, CA

Nancy Paskowitz, Oakland, CA

Rashid Patch, Oakland, CA

Nora Privitera, Oakland, CA

Christine Ranney, Oakland, CA

Ken Rice, Oakland, CA

Evelyn Riche, Oakland, CA

Clifford Robinson, Oakland, CA

Kate S, Oakland, CA

Rondi Saslow, Oakland, CA

Roberta Schear, Oakland, CA

Lesley Schultz, Oakland, CA

Ellen Schwartz, Oakland, CA

Karin Seid, Oakland, CA

Judith Smith, Oakland, CA

Leslie Smith, Oakland, CA

Martin Snapp, Oakland, CA

Madeline Stacy, Oakland, CA

Maria Steinmann, Oakland, CA

Kathleen Tandy, Oakland, CA

Nancy Taylor, Oakland, CA

Michele Tusinac, Oakland, CA

Pablo Voitzuk, Oakland, CA

Kim Walker, Oakland, CA

David Wasley, Oakland, CA

Gwen Weil, Oakland, CA

John Wills, Oakland, CA

Amy Zink, Oakland, CA

James TRUE, Oakland, CA

Molly Mendez, Oakley, CA

Robert Spotts, Oakley, CA

Longwillow Fudenberg, Occidental, CA

Sharon Mulkey, Oceano, CA

Charles Alger, Oceanside, CA

Kelly Brannigan, Oceanside, CA

Sarada Cleary, Oceanside, CA

Cynthia Davenport, Oceanside, CA

Darcy Duval, Oceanside, CA

Andrea Ferrari, Oceanside, CA

Tina Garner, Oceanside, CA

Cathy Gentry, Oceanside, CA

Holly Gilzow, Oceanside, CA

Alexis Grone, Oceanside, CA

Ronnie Huber, Oceanside, CA

Charlene Kerchevall, Oceanside, CA

Sherry Marsh, Oceanside, CA

Tamara Taunt, Oceanside, CA

Paula Thompson, Oceanside, CA

Carol Wanat, Oceanside, CA

Lisa Adair, Ojai, CA

Janine Comrack, Ojai, CA
Donna Freiermuth, Ojai, CA
Kathleen Medina, Ojai, CA
Valerie Shideler, Olivehurst, CA
Kelly Ayers, Ontario, CA
Valerie Carrick, Ontario, CA
Claudia Cook, Ontario, CA
Ron P, Ontario, CA
Lynn Baldini, Orange, CA
Ms Courtney, Orange, CA
Alexis Merz, Orange, CA
Raven Davis-King, Orangevale, CA
Nancy Polito, Orangevale, CA
Lucy Henderson, Orinda, CA
Patricia Moloney, Orinda, CA
Lori Bates, Oxnard, CA
Lynne Boyle, Oxnard, CA
Peggy Brown, Oxnard, CA
Angela C Embree, Oxnard, CA
Maree Penhart, Oxnard, CA
Barbara Piszczek, Oxnard, CA
April Toller, Oxnard, CA
Carolyn Boydston, Pacific Grove, CA
Gary Goetz, Pacific Grove, CA
Melissa Hutchinson, Pacific Grove, CA
Melissa Lippincott, Pacific Grove, CA
Celia Stauty Luis, Pacific Grove, CA
Jane Crist, Pacific Palisades, CA
Jake Gutman, Pacific Palisades, CA
Shannon Rhoades, Pacific Palisades, CA

Beth Schlaff, Pacific Palisades, CA
Ian Silverstein, Pacific Palisades, CA
Kathy Bede, Pacifica, CA
Brian Casey, Pacifica, CA
Ana Herold, Pacifica, CA
Deanna Nielsen, Pacifica, CA
Dita . . Â kaliÃ,, Â• , Palm Desert, CA
Alexia Valdora, Palm Desert, CA
Sandra Kanela Barton, Palm Springs, CA
Michael Biers, Palm Springs, CA
Vito Degrigoli, Palm Springs, CA
Wayne Fellabaum, Palm Springs, CA
FranÃf Ãf Ãf Ãf Ãf Ãf Ãf Ãf Ãf Ãf Ãf
f Ãf Ãf May, Palm Springs, CA
Bill McCarthy, Palm Springs, CA
Bill Munce, Palm Springs, CA
Maryellen Redish, Palm Springs, CA
Vivian Vaught, Palm Springs, CA
Mario Magpale, Palmdale, CA
Therese Ryan, Palmdale, CA
Karen Weston, Palmdale, CA
Debra Y, Palmdale, CA
Jaye Bergen, Palo Alto, CA
Jordan Briskin, Palo Alto, CA
Edward Cavasian, Palo Alto, CA
Ana Chou, Palo Alto, CA
Sheila Gholson, Palo Alto, CA
Nancy Leech, Palo Alto, CA
Marilyn Levine, Palo Alto, CA
Mary Lou Meeks, Palo Alto, CA

David Perry, Palo Alto, CA

Sara Van Dusen, Palo Alto, CA

Jan Gardner, Palos Verdes Peninsula, CA

Tajie Major, Palos Verdes Peninsula, CA

Sonia Noemi Cross, Paradise, CA

Marcie Ligammari, Paradise, CA

Joan Aebi, Pasadena, CA

Claude Alexander, Pasadena, CA

Cheryl Auger, Pasadena, CA

Linda B., Pasadena, CA

Catherine Beauchamp, Pasadena, CA

Darrell Clarke, Pasadena, CA

Linc Conard, Pasadena, CA

Richard Kornfeld, Pasadena, CA

Frances Liau, Pasadena, CA

Diane Miller, Pasadena, CA

Allison Moffett, Pasadena, CA

Jacqueline Pineda, Pasadena, CA

Charles Roth, Pasadena, CA

Pete Sloman, Pasadena, CA

Geoffrey Symcox, Pasadena, CA

Erinn Todd, Pasadena, CA

Susan Walp, Pasadena, CA

Joan Wickham, Pasadena, CA

Molly Bennett, Paso Robles, CA

Gail Ryland, Pebble Beach, CA

Mike Pasner, Penn Valley, CA

Jamie Sawtell, Penn Valley, CA

James Woods, Penn Valley, CA

Ernesto Marquez, Perris, CA

Chanda Scelsi, Perris, CA

M. Atkinson, Petaluma, CA

Arlene Baker, Petaluma, CA

Stephanie Charles, Petaluma, CA

Jerry Cook, Petaluma, CA

Stacey DeGooyer, Petaluma, CA

Wendy Denny, Petaluma, CA

Patti Fink, Petaluma, CA

Jamila Garrecht, Petaluma, CA

Diane Gentile, Petaluma, CA

Phoenix Giffen, Petaluma, CA

Elfi Gilford, Petaluma, CA

Michelle Letellier, Petaluma, CA

Ingeborg MacKay, Petaluma, CA

Annette Raible, Petaluma, CA

Chris Rose, Petaluma, CA

Gabrielle Swanberg, Petaluma, CA

Dennis Zerbo, Petaluma, CA

Barbara Wright, Phelan, CA

Susan Hathaway, Pico Rivera, CA

Philip Patino, Pico Rivera, CA

Peggy Holmes, Pinole, CA

Joan Nygaard, Pinole, CA

Carol Oller, Pinole, CA

Bob Leppo, Pismo Beach, CA

Randall Voss, Pismo Beach, CA

Dennis Young, Pismo Beach, CA

Annette Benton, Pittsburg, CA

Candy Bowman, Placerville, CA

Mike Rolbeck, Placerville, CA

Paulette Doulatshahi, Playa Del Rey, CA

Yvonne Fisher, Playa del Rey, CA

Barrett Braun, Pleasant Hill, CA

Mike Cluster, Pleasant Hill, CA

Joan Merrill, Pleasant Hill, CA

Francesca Rago, Pleasant Hill, CA

Deborah Santone, Pleasant Hill, CA

Renee Snyder, Pleasant Hill, CA

Barbara Norton, Pleasanton, CA

Daniel O'Brien, Pleasanton, CA

Urmila Padmanabhan, Pleasanton, CA

Vicki Tomola, Point Arena, CA

Twyla Meyer, Pomona, CA

Jenny Perez, Pomona, CA

Roxann Schaubhut, Pope Valley, CA

Veronica Goode, Porter Ranch, CA

Linda Bresnan, Portola Valley, CA

Karin Eckelmeyer, Portola Valley, CA

Mike Davis, Posey, CA

Joyce Heyn, Poway, CA

Kim Yirak, Poway, CA

Faith Strailey, Quincy, CA

Laura Bagley, Ramona, CA

Tammy Bullock, Ramona, CA

Don Miller, Ramona, CA

Nancy Hunter, Rancho Cordova, CA

Miriam Baum, Rancho Cucamonga, CA

Linda Bourg, Rancho Cucamonga, CA

Frederick Hamilton, Rancho Cucamonga, CA

Heidi Palmer, Rancho Cucamonga, CA

Judy Bradford, Rancho Palos Verdes, CA

Melina Paris, Rancho Palos Verdes, CA

Lin Penrose, Rancho Palos Verdes, CA

Linda Webb, Rancho Palos Verdes, CA

Andrea Abney, Rancho Santa Fe, CA

Alison Bassell, Rancho Santa Margarita, CA

Jack Schwartz, Receeda, CA

Cherie Gans, Redding, CA

Michael Koterba, Redding, CA

Harriet Miller, Redding, CA

Wayne Steffes, Redding, CA

Marianna Vanderklift, Redding, CA

Andrea Dixon, Redlands, CA

Carol Lynne Eyster, Redlands, CA

Sean Hagstrom, Redlands, CA

Doug Bender, Redondo Beach, CA

Laurel Cameron, Redondo Beach, CA

Michael Cavanaugh, Redondo Beach, CA

Maria Corvalan, Redondo Beach, CA

F. R. Eguren, Redondo Beach, CA

Glenn Embrey, Redondo Beach, CA

Stephane Ernoux, Redondo Beach, CA

Richard Esposito, Redondo Beach, CA

Kris Gata, Redondo Beach, CA

Amrit Khalsa, Redondo Beach, CA

M Montenegro, Redondo Beach, CA

Alie Rowen, Redondo Beach, CA

Anne M. Van Alstyne, Redondo Beach, CA

Jeri Fergus, Redway, CA

Erin Gellman, Redway, CA

Juliann Berman, Redwood City, CA

Michael House, Redwood City, CA

Lisa Jensen, Redwood City, CA

Tom Johnson, Redwood City, CA

Judith Kirk, Redwood City, CA

Thalia Lubin, Redwood City, CA

Chris Ouedec, Redwood City, CA

Robert Page, Redwood City, CA

Audrey Quintero, Redwood City, CA

Rush Rehm, Redwood City, CA

Margaret Rogers, Redwood City, CA

John West, Redwood City, CA

Joleen Siebert, Reedley, CA

Jl Angell, Rescue, CA

Rosa Baeza, Reseda, CA

Silvana Garcia, Reseda, CA

Carlos Nunez, Reseda, CA

Rachel Perlman, Reseda, CA

Tracy Gilbert, Rialto, CA

Vincent Bausano, Richmond, CA

Michael Eichenholtz, Richmond, CA

Melanie Hassel, Richmond, CA

Gail Jarocki, Richmond, CA

Kris Johnson Michiels, Richmond, CA

Peggy Mocine, Richmond, CA

Anne Oklan, Richmond, CA

Christine Peterson, Richmond, CA

Christine Peterson, Richmond, CA

Susan Archibald, Ridgecrest, CA

Penelope LePome, Ridgecrest, CA

Mary Loyd Shell, Ridgecrest, CA

Nancy Robinson, Ridgecrest, CA

Cheryl Davis, Rio Linda, CA

Tina Arnold, Rio Vista, CA

Susan Worden, Rio Vista, CA

Bonnie Arbuckle, Riverbank, CA

Sherry Fatzinger, Riverside, CA

Carolann Johnson, Riverside, CA

Harry Knapp, Riverside, CA

Abraham Oboruemuh, Riverside, CA

Henry Rosenfeld, Riverside, CA

Natacha Lascano, Rocklin, CA

Daniel McKeighen, Rocklin, CA

Vanessa Quintero, Rodeo, CA

Jeannie Boyd, Rohnert Park, CA

Elaine Cook, Rohnert Park, CA

Shannon Montoya, Rohnert Park, CA

Kyle Young, Rosamond, CA

Bob McCleary, Roseville, CA

Kevin Pierson, Roseville, CA

Lisa Steele, Roseville, CA

Julie Stinchcomb, Roseville, CA

Pat Thompson, Roseville, CA

Sandra Thompson, Roseville, CA

Dee Warenycia, Roseville, CA

Ann Wasgatt, Roseville, CA

Vicki L Smith, Running Springs, CA

James Adams, Sacramento, CA

Wayne Anderson, Sacramento, CA

Judith Anshin, Sacramento, CA

James Ashcraft, Sacramento, CA

Jennifer Bair, Sacramento, CA

Mark Allan Barath, Sacramento, CA

M Bennett, Sacramento, CA

Robert Boughton, Sacramento, CA

Maureen Burness, Sacramento, CA

Kimberly Carona, Sacramento, CA

Brendan Chan, Sacramento, CA

Sandy Commons, Sacramento, CA

BethAnn Coombs, Sacramento, CA

Deborah Cosentino, Sacramento, CA

Jim Deneff, Sacramento, CA

Cindy Ferguson, Sacramento, CA

Gilda Fusilier, Sacramento, CA

Camile Getter, Sacramento, CA

LuAnn Glatzmaier, Sacramento, CA

Susan Hood, Sacramento, CA

Karen Jacques, Sacramento, CA

Linda Karp, Sacramento, CA

Lily Lau-Enright, Sacramento, CA

Rebecca Martin, Sacramento, CA

Michael McGowan, Sacramento, CA

Marshal McKitrick, Sacramento, CA

Esther Mooncrest, Sacramento, CA

Dorothea Morgenstern, Sacramento, CA

Sharon Nicodemus, Sacramento, CA

Rosalind O'Brien, Sacramento, CA

Sheri Opp, Sacramento, CA

Joyce Ownbey, Sacramento, CA

Jana Perinchief, Sacramento, CA

Judith Poxon, Sacramento, CA

Penny Redman, Sacramento, CA

Susan Riseman, Sacramento, CA

LeAne Rutherford, Sacramento, CA

Gail Ryall, Sacramento, CA

Joseph Sebastian, Sacramento, CA

Aaron Stroh, Sacramento, CA

Erh-Yen To, Sacramento, CA

Tami Trearse, Sacramento, CA

Ellen Tubbs, Sacramento, CA

Jillian Unger, Sacramento, CA

Cara Vallot, Sacramento, CA

Lori White, Sacramento, CA

Kenneth Wilcox, Sacramento, CA

Bobbie Zawkiewicz, Sacramento, CA

Elizabeth Novak Milliken, Saint Helena, CA

Gerard Sewell, Saint Helena, CA

Alfred Gonzales, Salinas, CA

Lauren Keenan, Salinas, CA

Merlin Wilson, Salinas, CA

Alison Buist, San Anselmo, CA

Loren Carjulia, San Anselmo, CA

Ilene Malt, San Anselmo, CA

Renee Schofield, San Anselmo, CA

Herman Waetjen, San Anselmo, CA

C Leonard, San Bernardino, CA

Alicia Lomeli, San Bernardino, CA

Modell McEntire, San Bernardino, CA

Pamela Rogers, San Bernardino, CA

Pam Thomas-Hill, San Bernardino, CA

Eileen Cassidy, San Bruno, CA

Luci Evanston, San Bruno, CA

Elisse De Sio, San Carlos, CA

Kate Elsley, San Carlos, CA

Sharon Gong, San Carlos, CA

George Ruiz, San Carlos, CA

Teri Yazdi, San Carlos, CA

Kevin Bissonnette, San Clemente, CA

Randall Hartman, San Clemente, CA

Suzanne Narducy, San Clemente, CA

Allie Palmer, San Clemente, CA

Matt Reola, San Clemente, CA

Beth Rumph, San Clemente, CA

Vicki Wiker, San Clemente, CA

Terri Wiley, San Clemente, CA

Janis Andersen, San Diego, CA

Steven Bal, San Diego, CA

Michael Barnes, San Diego, CA

Cheryl Berkey, San Diego, CA

Cindy Blatnik, San Diego, CA

Michele Boswell, San Diego, CA

Joanne Britton, San Diego, CA

Bonnie Burke, San Diego, CA

Nicole Cervantes, San Diego, CA

B. Chan, San Diego, CA

Christopher Chatard, San Diego, CA

Cecelia Conover, San Diego, CA

April Cordero, San Diego, CA

Bob Davis, San Diego, CA

Terri Dewhirst, San Diego, CA

Elaine Durson, San Diego, CA

Cheryl Elkins, San Diego, CA

Patricia J Flaherty, San Diego, CA

Joan Fulton, San Diego, CA

Bruce Gardner, San Diego, CA

Sharon Gaudette-Hieserich, San Diego, CA

Michelle Grimes, San Diego, CA

Dale Haas, San Diego, CA

Robin Halliday, San Diego, CA

David Haskins, San Diego, CA

Trudi Howell, San Diego, CA

Mari Huff, San Diego, CA

Michael A. Johnston, San Diego, CA

Sean Kilpatrick, San Diego, CA

Diane Krell-Bates, San Diego, CA

Lisa Kutner, San Diego, CA

Rochelle La Frinere, San Diego, CA

Stephanie Laman, San Diego, CA

Patricia Law, San Diego, CA

Paul Levesque, San Diego, CA

Lacey Levitt, San Diego, CA

Mary Jo Lindstrom, San Diego, CA

Colleen Lobel, San Diego, CA

Jimmy Long, San Diego, CA

Jimmie Lunsford, San Diego, CA

Marsha Lyon, San Diego, CA

Martin Marcus, San Diego, CA

Mara Mayfield, San Diego, CA

Andrew McGranahan, San Diego, CA

Mika Menasco, San Diego, CA

Pam Montroy, San Diego, CA

Kim Perszyk, San Diego, CA

Shirley Petersen, San Diego, CA

Scott Pham, San Diego, CA

Raffaella Pippa, San Diego, CA

Lauren Prust, San Diego, CA

Patrick Reid, San Diego, CA

Babette Rose, San Diego, CA

Melanie Ross, San Diego, CA

Conor S, San Diego, CA

Alice Savage, San Diego, CA

Barbara Schell, San Diego, CA

George Schneider, San Diego, CA

Viviane Sebert, San Diego, CA

Sid Shapiro, San Diego, CA

Skip Shaputnic, San Diego, CA

Judy Shively, San Diego, CA

Hal Slater, San Diego, CA

G.H. Soto, San Diego, CA

Allison Souza, San Diego, CA

Joan Spooner, San Diego, CA

Peggy Standley, San Diego, CA

Brian Still, San Diego, CA

Peggy Stone, San Diego, CA

Kathleen Sumida, San Diego, CA

Jeff Thayer, San Diego, CA

Elena Tillman, San Diego, CA

Ava Torre-Bueno, San Diego, CA

Gary Tourville, San Diego, CA

Dorothy Vieira, San Diego, CA

Shawn Wass, San Diego, CA

Linda Wilson, San Diego, CA

Debra Winthrop, San Diego, CA

Tansy Woods, San Diego, CA

Allen Yarowsky, San Diego, CA

Ken Young, San Diego, CA

Ray Ziegler, San Diego, CA

Sylvia De Baca, San Dimas, CA

Sandra Esparza, San Dimas, CA

Rev. Maria Riter Wilson, San Dimas, CA

Mary Ellen Gastelo, San Fernando, CA

Stef B, San Francisco, CA

Linda Bellavia, San Francisco, CA

Kathryn Bender, San Francisco, CA

Charlie Bergstedt, San Francisco, CA

Joseph Blum, San Francisco, CA

Kathleen Bouvier, San Francisco, CA

Richard Bradus, San Francisco, CA

Jonica Brooks, San Francisco, CA

Cecilia Brunazzi, San Francisco, CA

Leo Buckley, San Francisco, CA

Christine Burckhardt, San Francisco, CA

Tim Butler, San Francisco, CA

Ag Callan, San Francisco, CA

Len Carella, San Francisco, CA

Mary Chase, San Francisco, CA

Winnie Chin, San Francisco, CA

Luz Cobarrubias, San Francisco, CA

Sandi Covell, San Francisco, CA

Sarah Date, San Francisco, CA

Maia de Raat, San Francisco, CA
Christie Decker, San Francisco, CA
James DiCarlo, San Francisco, CA
Lawrence Dillard, San Francisco, CA
Glenna Dowling, San Francisco, CA
Jerilyn Downing, San Francisco, CA
Ramona Draeger, San Francisco, CA
Susan Dugger-Mathison, San Francisco, CA
Jym Dyer, San Francisco, CA
Evan Elias, San Francisco, CA
Bee Epremian, San Francisco, CA
Rita Fahrner, San Francisco, CA
Adrienne Fong, San Francisco, CA
Pamela Glintenkamp, San Francisco, CA
Stephen Gold, San Francisco, CA
Linda Gourley, San Francisco, CA
Gia Granucci, San Francisco, CA
J. Barry Gurdin, San Francisco, CA
Sharon Handa, San Francisco, CA
Sharon Hefke, San Francisco, CA
Mali Henigman, San Francisco, CA
Birgit Hermann, San Francisco, CA
Saroyan Humphrey, San Francisco, CA
Jeffrey Hurwitz, San Francisco, CA
Pauline Kahney, San Francisco, CA
Constance Kao, San Francisco, CA
Lisa Kellman, San Francisco, CA
Karen Kirschling, San Francisco, CA
Betty Kissilove, San Francisco, CA
Ellen Koivisto, San Francisco, CA

Ady Larsen, San Francisco, CA
R Dene Larson, San Francisco, CA
Peter Lee, San Francisco, CA
David Lin, San Francisco, CA
Helen Loeser, San Francisco, CA
Denise Louie, San Francisco, CA
Pamela Magers, San Francisco, CA
Mariano Marquez III, San Francisco, CA
Jon Mc Veight, San Francisco, CA
Marisa McFarlane, San Francisco, CA
Shannon Mcneil, San Francisco, CA
Anuruddh Misra, San Francisco, CA
Bianca Molgora, San Francisco, CA
William Mora, San Francisco, CA
Mary Moycik, San Francisco, CA
Gretchen Mueller, San Francisco, CA
Ron Nieberding, San Francisco, CA
Mary Novasic, San Francisco, CA
Maria Nowicki, San Francisco, CA
John Oda, San Francisco, CA
Marsha Orent, San Francisco, CA
Matthew Parker, San Francisco, CA
Annalee Pineda, San Francisco, CA
Jackie Pomies, San Francisco, CA
Susan Powers, San Francisco, CA
Francesca Prada, San Francisco, CA
Jessica Pullano, San Francisco, CA
Charles Ray, San Francisco, CA
Ivan Rhudick, San Francisco, CA
Matt Richardson, San Francisco, CA

Roberto Romo, San Francisco, CA
Joan Rost, San Francisco, CA
Kim Russo, San Francisco, CA
Christi Saltonstall, San Francisco, CA
Natasha Saravanja, San Francisco, CA
Karin Schmidt, San Francisco, CA
Dan Schubart, San Francisco, CA
Judy Schultz, San Francisco, CA
Erika Shershun, San Francisco, CA
Paul Shimazaki, San Francisco, CA
RoseMarie Shishkin, San Francisco, CA
Carolyn Shuman, San Francisco, CA
Laura Simmons, San Francisco, CA
John Steponaitis, San Francisco, CA
Tai Stillwater, San Francisco, CA
Robert Stine, San Francisco, CA
Edward Sullivan, San Francisco, CA
Sara T, San Francisco, CA
Michael Tomczyszyn, San Francisco, CA
Justin Truong, San Francisco, CA
Anthony Tupasi, San Francisco, CA
Iris Vaughan, San Francisco, CA
Wolfgang Vermeer, San Francisco, CA
Nathan Vogel, San Francisco, CA
Linda Weiner, San Francisco, CA
Maxine Zylberberg, San Francisco, CA
Michele Massey, San Jacinto, CA
Kieran Alcumbrac, San Jose, CA
Sue Andarmani, San Jose, CA
Murielle Antoku, San Jose, CA

Thomas Arnold, San Jose, CA
Teresa Awtrey, San Jose, CA
Tim Barrington, San Jose, CA
Allan Campbell, San Jose, CA
Manou Cassel, San Jose, CA
Beng Chiu, San Jose, CA
Edward Fairchild, San Jose, CA
Mary Fedullo, San Jose, CA
Ted Fishman, San Jose, CA
Mark Galbraith, San Jose, CA
Charlene Garcia, San Jose, CA
Susan Golbetz, San Jose, CA
Elaine Gould, San Jose, CA
Michael Hazelton, San Jose, CA
Charlene Henley, San Jose, CA
Randall Herz, San Jose, CA
Tania I Redlich, San Jose, CA
Pec Indman, San Jose, CA
Paula Kerrebijn, San Jose, CA
Santosh Kumar, San Jose, CA
Eva Lanker, San Jose, CA
Allen Leinwand, San Jose, CA
Miriam Leiseroff, San Jose, CA
Patty Linder, San Jose, CA
Claude McDonald, San Jose, CA
Du Ng, San Jose, CA
Margaret P, San Jose, CA
Jim Petkiewicz, San Jose, CA
Jamie Pfister, San Jose, CA
Veronica Romero, San Jose, CA

Charles Smith, San Jose, CA
Singgih Tan, San Jose, CA
Susan Trivisonno, San Jose, CA
Susan Urang, San Jose, CA
Nona Weiner, San Jose, CA
Jimmie Yonemoto, San Jose, CA
Dave Beck, San Juan Capistrano, CA
Philip Fraser, San Juan Capistrano, CA
Lucille Robustelli, San Juan Capistrano, CA
Aj Cho, San Leandro, CA
Michael Denton, San Leandro, CA
Gloria Eive, San Leandro, CA
Linda Gee, San Leandro, CA
Roberta LaFrance, San Leandro, CA
John Moreau, San Leandro, CA
John Payne, San Lorenzo, CA
Monica Barricarte, San Luis Obispo, CA
Joseph Boone, San Luis Obispo, CA
Maryan Infield, San Luis Obispo, CA
Sharon Rheingans, San Luis Obispo, CA
Nancy Walter, San Luis Obispo, CA
Liz Brown, San Marcos, CA
Dianne Christ, San Marcos, CA
Laura Dufel, San Marcos, CA
Randy Gray, San Marcos, CA
Teri Kelly, San Marcos, CA
John Maxwell, San Marcos, CA
Joan Quinn, San Marcos, CA
Lois Ruble, San Marcos, CA
Brooke Scruggs, San Marcos, CA

Mary Ann Seltzer, San Marcos, CA
Thelma Faulkner, San Martin, CA
Elise Beliak, San Mateo, CA
Gina Colangelo, San Mateo, CA
Kevin Hearle Ph.D., San Mateo, CA
Linda Johnson, San Mateo, CA
Evan Josa, San Mateo, CA
Evelyn Newman, San Mateo, CA
Tom Pache, San Mateo, CA
Mark Rhynsburger, San Mateo, CA
Mark Rhynsburger, San Mateo, CA
Mariano Svidler, San Mateo, CA
Leyza Yardley, San Mateo, CA
Leah Fagundes, San Pablo, CA
Linda Morgan, San Pablo, CA
Carol Schaffer, San Pablo, CA
Brooke Balestreri, San Pedro, CA
Susan Bogdanovich, San Pedro, CA
Molly Brent, San Pedro, CA
Angela Carter, San Pedro, CA
Sharon Caserma, San Pedro, CA
Matt Davison, San Pedro, CA
Petrina Long, San Pedro, CA
Anne Barker, San Rafael, CA
Susan Berlin, San Rafael, CA
Kelly Berry, San Rafael, CA
Eileen Blossman, San Rafael, CA
Cayla Coleman, San Rafael, CA
Steven Gaman, San Rafael, CA
James Haig, San Rafael, CA

Margie Halladin, San Rafael, CA
Sandra Levine MD, San Rafael, CA
Erika Martinez, San Rafael, CA
Diana McBride, San Rafael, CA
Elaine Mont-Eton, San Rafael, CA
Dianne Morrison, San Rafael, CA
Susan Peters, San Rafael, CA
Mary Poor, San Rafael, CA
Allegra Printz, San Rafael, CA
Peter Ring, San Rafael, CA
Jena Rose, San Rafael, CA
Philip Simon, San Rafael, CA
Ariel Spilsbury, San Rafael, CA
Deborah Temple, San Rafael, CA
Lydia Vignau, San Rafael, CA
Jenifer Wilson, San Rafael, CA
Jason Witchel, San Rafael, CA
Jeffrey Hemenez, San Ramon, CA
Charles Wieland, San Ramon, CA
Patrick Farrell, San Ysidro, CA
Sarah Baxter, Santa Ana, CA
Colleen Bergh, Santa Ana, CA
Nicolas Duonn, Santa Ana, CA
Mike Honda, Santa Ana, CA
Richard Spicer, Santa Ana, CA
Marie Winter, Santa Ana, CA
Dennis Allen, Santa Barbara, CA
Thea Altman, Santa Barbara, CA
Debby Anderson, Santa Barbara, CA
Martha Aubin, Santa Barbara, CA

Trudy Bixby, Santa Barbara, CA
Tina Brenza, Santa Barbara, CA
Lisabette Brinkman, Santa Barbara, CA
Heather Brophy, Santa Barbara, CA
Thomas Burt, Santa Barbara, CA
Lynne Cantlay, Santa Barbara, CA
Carole Ann Cole, Santa Barbara, CA
Ronit Corry, Santa Barbara, CA
Katherine Crawford, Santa Barbara, CA
Jenny Cushnie, Santa Barbara, CA
Gary Denny, Santa Barbara, CA
Catharine Edwardson, Santa Barbara, CA
Joel Fithian, Santa Barbara, CA
Camille Gilbert, Santa Barbara, CA
Janet Graham, Santa Barbara, CA
Madeleine Ignon, Santa Barbara, CA
Katherine Johnson, Santa Barbara, CA
Virginia Johnstone, Santa Barbara, CA
John Kay, Santa Barbara, CA
Connie Marquez, Santa Barbara, CA
Nancy Martin, Santa Barbara, CA
Michael Merenda, Santa Barbara, CA
Sandra Moore, Santa Barbara, CA
Lauren Murdock, Santa Barbara, CA
Edith Ogella, Santa Barbara, CA
Gina Petuskey, Santa Barbara, CA
Barbara Rosen, Santa Barbara, CA
Miranda Scalzo, Santa Barbara, CA
Chris Seaton, Santa Barbara, CA
Wendy Simons, Santa Barbara, CA

Julie Sullwold, Santa Barbara, CA

Sandy Suttton, Santa Barbara, CA

Katie Thibodeau, Santa Barbara, CA

Paul Voyer, Santa Barbara, CA

Bill Woodbridge, Santa Barbara, CA

Theresa Yandell, Santa Barbara, CA

Friend Friend, Santa Clara, CA

Alexis Georgiou, Santa Clara, CA

Kim Messmer, Santa Clara, CA

Judy Rees, Santa Clara, CA

Mushtaq Syed, Santa Clara, CA

Carina Chadwick, Santa Clarita, CA

James McKelvey, Santa Clarita, CA

John Paladin, Santa Clarita, CA

David Soto, Santa Clarita, CA

Anita Wisch, Santa Clarita, CA

Paul Andrade, Santa Cruz, CA

Leslie Andrews, Santa Cruz, CA

Joyce Banzhaf, Santa Cruz, CA

Milo Barisof, Santa Cruz, CA

David Bezanson PhD, Santa Cruz, CA

Elaine Boles, Santa Cruz, CA

Martha Carrington, Santa Cruz, CA

Michael Cooper, Santa Cruz, CA

Teresa Coyle, Santa Cruz, CA

Janet De Lu, Santa Cruz, CA

MarianKitty Dennis, Santa Cruz, CA

Richard Gallo, Santa Cruz, CA

Barbara Ginsberg, Santa Cruz, CA

Bruce Grobman, Santa Cruz, CA

Jacob Huskey, Santa Cruz, CA

Carolyn T Israel, Santa Cruz, CA

Lizann Keyes, Santa Cruz, CA

Mary Kuntz-Cote, Santa Cruz, CA

Kevin Manning, Santa Cruz, CA

Karsten Mueller, Santa Cruz, CA

Eric Nysten, Santa Cruz, CA

Vivienne Orgel, Santa Cruz, CA

David Pierotti, Santa Cruz, CA

Elizabeth Potts, Santa Cruz, CA

David Ross, Santa Cruz, CA

Emmanuel Ross Hartway, Santa Cruz, CA

Lynda Sierra, Santa Cruz, CA

Bret Smith, Santa Cruz, CA

Erica Stanojevic, Santa Cruz, CA

Pela Tomasello, Santa Cruz, CA

Sylvia Vairo, Santa Cruz, CA

Russell Weisz, Santa Cruz, CA

Rachel Wolf, Santa Cruz, CA

Eric Anches, Santa Maria, CA

Jerid Anderson, Santa Maria, CA

Carlos Arnold, Santa Maria, CA

Nancy Heck, Santa Maria, CA

Nancy Miller, Santa Maria, CA

Joanne Altschuler, Santa Monica, CA

Dr. Jon Amsden, Santa Monica, CA

John Barone, Santa Monica, CA

Elizabeth Chang, Santa Monica, CA

Steven Chasen, Santa Monica, CA

Phyllis Chavez, Santa Monica, CA

Shelley Corwin, Santa Monica, CA

Guillemette Epailly, Santa Monica, CA

Deborah Fallender, Santa Monica, CA

Glenn and Alexandra Garrison, Santa Monica,
CA

Patricia Healy, Santa Monica, CA

Janet Heinle, Santa Monica, CA

Amelia Jones, Santa Monica, CA

Rachel Kelley, Santa Monica, CA

Chelsey Marsing, Santa Monica, CA

Anne Munitz, Santa Monica, CA

Ted Myers, Santa Monica, CA

Ruth Olafsdottir, Santa Monica, CA

Diane Olson, Santa Monica, CA

Jerry Persky, Santa Monica, CA

Mary Rojeski, Santa Monica, CA

Mary Romanek, Santa Monica, CA

D. Rowe, Santa Monica, CA

Myra Schegloff, Santa Monica, CA

Alex Sokolow, Santa Monica, CA

Shelley Sterrett, Santa Monica, CA

J Yudell, Santa Monica, CA

Louise Priest, Santa Paula, CA

Louise Rangel, Santa Paula, CA

Cristina Amarillas, Santa Rosa, CA

Gillian Anderson, Santa Rosa, CA

Leanne B., Santa Rosa, CA

Linda Bell, Santa Rosa, CA

Jerry Bernhaut, Santa Rosa, CA

Patricia Bode, Santa Rosa, CA

David Zachary Brown, Santa Rosa, CA

Deb Dearing, Santa Rosa, CA

Ryan Dell, Santa Rosa, CA

Janet Drew, Santa Rosa, CA

Louise Espinoza, Santa Rosa, CA

Mark Feldman, Santa Rosa, CA

Zora Hocking, Santa Rosa, CA

Jude Iam, Santa Rosa, CA

Barbara Judson, Santa Rosa, CA

Lucy Kenyon, Santa Rosa, CA

Bernard Lefson, Santa Rosa, CA

Ellen Lewis, Santa Rosa, CA

Lois Look, Santa Rosa, CA

Dan McAllister, Santa Rosa, CA

Bob Miller, Santa Rosa, CA

Jane Moad, Santa Rosa, CA

Lorilie Morey, Santa Rosa, CA

Jana Mariposa Muhar, Santa Rosa, CA

Josie Peluso, Santa Rosa, CA

Daniel Podell, Santa Rosa, CA

Joe Salazar, Santa Rosa, CA

Linda Thompson, Santa Rosa, CA

Ken Wilson, Santa Rosa, CA

Pam Zimmerman, Santa Rosa, CA

Gary Beckerman, Santa Ynez, CA

Vicki Call, Santee, CA

Elizabeth McCandless, Santee, CA

Rob Roberto, Santee, CA

Kelly Doyle, Sausalito, CA

Evan Jane Fletcher, Sausalito, CA

Evan Jane Kriss, Sausalito, CA

Patricia Pigman, Sausalito, CA

Lonna Richmond, Sausalito, CA

Greg Thomson, Sausalito, CA

Gerald Cummings, Scotts Valley, CA

Rob Dun, Scotts Valley, CA

Kay MacDonald, Seal Beach, CA

Bernadette Meltzer, Seal Beach, CA

Natalija Sale, Seal Beach, CA

Brent Spencer, Seal Beach, CA

Enrico Verga, Seal Beach, CA

Scott Ames, Sebastopol, CA

Felicia Bander, Sebastopol, CA

Corey Barnes, Sebastopol, CA

Stacie Charlebois, Sebastopol, CA

Sharron Fisher, Sebastopol, CA

Kris Hall, Sebastopol, CA

Katharine Kehr, Sebastopol, CA

Deborah Kermode, Sebastopol, CA

Constance Miles, Sebastopol, CA

Kenneth Mooney, Sebastopol, CA

Lilith Rogers, Sebastopol, CA

Sharon Sadler, Sebastopol, CA

Julie Sicaud, Sebastopol, CA

Susan Stover, Sebastopol, CA

Lisa Salazar, Shasta Lake, CA

Reuben Allen, Sherman Oaks, CA

Gene Arias, Sherman Oaks, CA

Carol Becker, Sherman Oaks, CA

Hilarey Benda, Sherman Oaks, CA

Stephanie Colet, Sherman Oaks, CA

Jeffrey Jones, Sherman Oaks, CA

Jodi Milstein, Sherman Oaks, CA

Patrick Pade, Sherman Oaks, CA

Patricia Ritter, Sherman Oaks, CA

Mox Ruge, Sherman Oaks, CA

Sheila Desmond, Shingle Springs, CA

Karen Neumeier, Shingle Springs, CA

John Lamb, Sierra Madre, CA

Marguerite Shuster, Sierra Madre, CA

Carol Hewitt, Signal Hill, CA

Patti Barto, Silverado, CA

Derek Beauchemin, Simi Valley, CA

Christina Ciesla, Simi Valley, CA

Justin Duso, Simi Valley, CA

Frances Emanuel, Simi Valley, CA

James Johnson, Simi Valley, CA

Mary Ann Lowe, Simi Valley, CA

Madison Mitchell, Simi Valley, CA

Pam Morarre, Simi Valley, CA

Brad Parsa, Simi Valley, CA

Chuck Rocco, Simi Valley, CA

Jack Rollens, Simi Valley, CA

Diana Shycoff, Simi Valley, CA

Kelsey McCann, Sloughhouse, CA

Laurie Neill, Smith River, CA

Christy Bulskov, Solana Beach, CA

Natasha Weaver, Solana Beach, CA

Debra Hunt, Solvang, CA

Carol Lake, Solvang, CA

Andy Philpot, Solvang, CA

Michelle Sparks-Gillis, Solvang, CA

Sheila Silan, Somerset, CA

Joy Pratt, Somis, CA

Renee Darner, Sonoma, CA

John Feissel, Sonoma, CA

Penny Hartman, Sonoma, CA

Patricia Locks, Sonoma, CA

Helen Mehl, Sonoma, CA

June Osbourn, Sonoma, CA

Michael R. Watson, Sonoma, CA

Brad Squires, Sonoma, CA

Michelle Allison, Sonoma, CA

Leslie Kowalczyk, Sonoma, CA

Stephen Foltz, Soquel, CA

Sonia King, Soquel, CA

Gary Landgrebe, Soquel, CA

Pamela Machutt, Soquel, CA

Marianna Mejia Contact, Soquel, CA

Sallye Steiner Bowyer, Soquel, CA

Diana Swisher, Soquel, CA

Hunter Wallof, Soulsbyville, CA

Arturo Beyeler, South Lake Tahoe, CA

Anne Roos, South Lake Tahoe, CA

Francie Stone, South Lake Tahoe, CA

Scott Jung, South Pasadena, CA

Yuliya Rudnik, South Pasadena, CA

Liz Ibarra, South San Francisco, CA

Ron Parsons, South San Francisco, CA

Heidi Behnke, Spring Valley, CA

Jennifer Bradford, Spring Valley, CA

Patricia Hadsall, Spring Valley, CA

Theodora Moriarty, Spring Valley, CA

Terrie Smith, Spring Valley, CA

Toni Watson, Spring Valley, CA

Joyce Kolasa, Springville, CA

Carol Ruth, Stanford, CA

Nikki Larkins, Stanton, CA

Stu Greenburg, Stevenson Ranch, CA

Michelle Montano, Stockton, CA

Alisha Nickols, Stockton, CA

Barb Varellas, Stockton, CA

Andra Eisen, Studio City, CA

Ines Glorian, Studio City, CA

Genevieve Guzman, Studio City, CA

Susan Lea, Studio City, CA

Ellen Little, Studio City, CA

David Norrell, Studio City, CA

Natalia Spornik, Studio City, CA

Inga Stanelun, Studio City, CA

James Roberts, Sugarloaf, CA

Robin Van Tassell, Summerland, CA

Chris Hernandez, Sun Valley, CA

Gerald Shaia, Sun Valley, CA

Katharine Warner, Sunland, CA

Scott Barlow, Sunnyvale, CA

Ernest Boyd, Sunnyvale, CA

John Cremin, Sunnyvale, CA

Krista Dana, Sunnyvale, CA

Marilyn Hall, Sunnyvale, CA

Rose Linn, Sunnyvale, CA

Richard Payne, Sunnyvale, CA

John Robbins, Sunnyvale, CA

Laura Robichek, Sunnyvale, CA

Marcia Sherman, Sunnyvale, CA

Vira Confectioner, Sunol, CA

Sandra Hendricks, Sutter Creek, CA

Sally Lambert, Sutter Creek, CA

Theo Dawson, Sylmar, CA

Chad Johnson, Sylmar, CA

Margarita Perez, Sylmar, CA

Charles Wolfe, Sylmar, CA

Carol p, Tahoe Vista, CA

El. Pe., Talmage, CA

Nilofar Amier, Tarzana, CA

Louise Bianco, Tarzana, CA

Theresa Bucher, Tarzana, CA

Monica Freedman, Tarzana, CA

Roger Hollander, Tarzana, CA

Ken Bailey, Taylorsville, CA

Gail Roberts, Tecate, CA

Missie Smith, Tehachapi, CA

Wendy Allen, Temecula, CA

Richard Blain, Temecula, CA

Holly Hall, Temecula, CA

Jena Hallmark, Temecula, CA

Deborah McIntosh, Temecula, CA

John Peterson, Temecula, CA

Janet Rhodes, Temecula, CA

Linda Skorheim, Temple City, CA

Cassie A. Murphy, Templeton, CA

Deborah Filipelli, PhD, The Sea Ranch, CA

Victoria Behar, Thousand Oaks, CA

Lexie Cataldo, Thousand Oaks, CA

Elaine Edell, Thousand Oaks, CA

Stephen Fitch, Thousand Oaks, CA

Mariana Mellor, Thousand Oaks, CA

Gary Raymond, Thousand Oaks, CA

Joanne Sulkoske, Thousand Oaks, CA

Gerry Williams, Thousand Oaks, CA

Rochelle Adelman, Three Rivers, CA

Lyndell Pritchett, Three Rivers, CA

Lulu LaRocca, Toluca Lake, CA

Isabel Freeman, Topanga, CA

Jed Fuhrman, Topanga, CA

Kenneth Miller, Topanga, CA

Jaime Nahman, Topanga, CA

Julie Ries, Topanga, CA

Penelope Ward, Topanga, CA

Kristina Wunder, Topanga, CA

Sherrie King, Torrance, CA

Joyce M Campbell, Torrance, CA

Jeff Pierce, Torrance, CA

Faye Ryan, Torrance, CA

Lynn Ryan, Torrance, CA

Diana Waters, Torrance, CA

Shelley Zagars, Torrance, CA

Elissa Babiuk, Trabuco Canyon, CA

Jinx Hydeman, Trabuco Canyon, CA

Douglas McCormick, Trabuco Canyon, CA

Theresa Hundchen, Tracy, CA
Deborah Frame, Trinidad, CA
Jen Gavin, Trinidad, CA
Ron Melin, Trinidad, CA
C E Mone, Trinidad, CA
Glenn Ross, Trinidad, CA
Brett Bell, Tujunga, CA
Simone Boudriot, Tujunga, CA
Probyn Gregory, Tujunga, CA
Barbara Newton, Turlock, CA
Everett A. Vieira III, Turlock, CA
Perry Gx, Tustin, CA
Stephen Bohac, Twain Harte, CA
Beverly Tiner, Twentynine Palms, CA
Olive Franklin, Ukiah, CA
James McArdle, Ukiah, CA
Tom McDonough, Ukiah, CA
Eileen Mitro, Ukiah, CA
Judi Walsh, Ukiah, CA
Mark Winkler, Ukiah, CA
George Wood, Ukiah, CA
Shelley Abbate, Union City, CA
Ernest Walters, Union City, CA
Courtney Christoffer, Upland, CA
Christine Hayes, Upland, CA
Jay Jones, Upland, CA
Jo Mandrell, Upland, CA
Yvonne Smith, Upland, CA
Nicole Amato, Vacaville, CA
Nicole Antonelli, Vacaville, CA

Denice Eldridge, Vacaville, CA
Lorraine Lowry, Vacaville, CA
Debra Reuter, Vacaville, CA
Janice Boyd, Valencia, CA
Sara Fogan, Valencia, CA
Jane Casey, Vallejo, CA
Suzanne Connors, Vallejo, CA
Victoria Humphrey, Vallejo, CA
Alicia Jackson, Vallejo, CA
Carmen Klucsor, Vallejo, CA
Nikki Nafziger, Vallejo, CA
Kathleen Powell, Vallejo, CA
Lana Touchstone, Vallejo, CA
Florence Litton, Valley Center, CA
Laura Diffenbaugh, Valley Springs, CA
Gail Krieger, Valley Springs, CA
Monica Smith, Valley Springs, CA
Amy Fleiss, Valley Village, CA
Cindee H, Valley Village, CA
Darynne Jessler, Valley Village, CA
Kim Nicholson, Valley Village, CA
Jennifer Wilson, Valley Village, CA
Dudley and Candace Campbell, Van Nuys, CA
Reed Fenton, Van Nuys, CA
Agnieszka Goczek, Van Nuys, CA
Janet Laur, Van Nuys, CA
Stephanie Proctor, Van Nuys, CA
Ken Windrum, Van Nuys, CA
Karen Brodtkin, Venice, CA
Jesse Croxton, Venice, CA

Linda Eberle, Venice, CA

Richard Horne, Venice, CA

Kenneth Howard, Venice, CA

Nan Lamb, Venice, CA

Deborah Rumens, Venice, CA

Ruth Seroussi, Venice, CA

Titiphan Vutiprichar, Venice, CA

Jennifer Abernathy, Ventura, CA

Kathleen Applen, Ventura, CA

Sherry Berry, Ventura, CA

David Cotner, Ventura, CA

Tim Covey, Ventura, CA

Barbara Dincau, Ventura, CA

Jamie Green, Ventura, CA

Mabel Gulovsen, Ventura, CA

Ms. Lilith, Ventura, CA

Nina Minsky, Ventura, CA

Kenneth Pennington, Ventura, CA

Sherry Schafer, Ventura, CA

Karen Socher, Ventura, CA

Mary Stanistreet, Ventura, CA

Melissa Vasconcellos, Ventura, CA

Barbara Whyman, Ventura, CA

Simone Fonseca, Victorville, CA

Paula Lopez, Victorville, CA

Carol Wiley, Victorville, CA

Laurie Gorman, Visalia, CA

Arlene Shayer, Visalia, CA

Patricia A Marks, Vista, CA

Jennifer Ball, Vista, CA

Barbara Bernatovich, Vista, CA

Tamara Bond, Vista, CA

Ad Clayton, Vista, CA

Angela Clayton, Vista, CA

Tyler Fitzgerald, Vista, CA

Mary Gilman, Vista, CA

Chad Kapusta, Vista, CA

Marilyn Baldwin, Volcano, CA

Erfin Hartojo, Walnut, CA

Jackie Samallo, Walnut, CA

Richard Saretsky, Walnut, CA

Rita Thio, Walnut, CA

Ana Belle, Walnut Creek, CA

Constantine Bogios, Walnut Creek, CA

Colleena Brazen, Walnut Creek, CA

Thomas Brustman, Walnut Creek, CA

Colleen Dowd, Walnut Creek, CA

Dale Drouin, Walnut Creek, CA

Ruth Felix, Walnut Creek, CA

Julia Fuller, Walnut Creek, CA

Madelaine Georgette, Walnut Creek, CA

Marsha Goodman, Walnut Creek, CA

Janicedotherighthing Greenberg, Walnut Creek, CA

Barbara Greenwood, Walnut Creek, CA

Helen Hays, Walnut Creek, CA

Barb Linc, Walnut Creek, CA

Michele Dawn Sanderson, Walnut Creek, CA

Karen Savelich, Walnut Creek, CA

J. Schaffell, Walnut Creek, CA

Andrea Schauer, Walnut Creek, CA
David Wendt, Walnut Creek, CA
Suzanne Nevins, Warner Springs, CA
Paul Cheney, Watsonville, CA
Michael Craib, Watsonville, CA
Mary Doane, Watsonville, CA
Monica Gordon, Watsonville, CA
Valerie Justus-Rusconi, Watsonville, CA
Sarah Peck, Watsonville, CA
Michael C. Ford and Richard B. Marks,
Watsonville, CA
Celeste Stanik, Watsonville, CA
Shireen Nickel, Weed, CA
Diana Sottana, Weed, CA
Maria Fraga, West Covina, CA
Georgina Perez, West Covina, CA
Consuelo Rovirosa, West Covina, CA
Jeanne Schuster, West Covina, CA
Shari Becker, West Hills, CA
Rebecca Clark, West Hills, CA
Linda Howie, West Hills, CA
Pilar Zorrilla, West Hills, CA
David Aronovitch, West Hollywood, CA
Abbie Bernstein, West Hollywood, CA
Howard H. Holmes, West Hollywood, CA
Susan Mathison, West Hollywood, CA
Tameka Murrain, West Hollywood, CA
Christina Nillo, West Hollywood, CA
Paul Stanley, West Hollywood, CA
Agnew Wilson, West Hollywood, CA

Signe Wetteland, West Sacramento, CA
Barbara E., Westlake Village, CA
Stacey Keller, Westlake Village, CA
Heather Kovach, Westlake Village, CA
Theron Akers, Westminster, CA
David Cristini, Westminster, CA
Brandon Lowentrou, Westminster, CA
Tina Colafranceschi, Whitethorn, CA
Walter Huitema, Whittier, CA
Vanessa Leal, Whittier, CA
Michael Allen, Willits, CA
Stacey Rohrbaugh, Willits, CA
Sally Wieland, Willits, CA
Matthew Culmore, Windsor, CA
Claudia Piaseckyj, Winnetka, CA
Charles Raines, Winnetka, CA
Bita Edwards, Woodacre, CA
Susan Pelican, Woodland, CA
Bronwen Hughes, Woodland Hills, CA
Stephanie Larro, Woodland Hills, CA
Debra Lawrence, Woodland Hills, CA
Jollee Saphier, Woodland Hills, CA
Eva Thomas, Woodside, CA
Dianne Ostrow, Wrightwood, CA
C Rivera, X, CA
Susan Wayne, Xxx, CA
Marilyn Adams, Yorba Linda, CA
Kathleen Fernandez, Yorba Linda, CA
Barry Lovinger, Yorba Linda, CA
Gabriel Graubner, Yountville, CA

Charles Heinrichs, Yreka, CA

Linda Freeman, Yuba City, CA

Ashley Millard, Yuba City, CA

Norm Wilmes, Yuba City, CA

Gilbert Crabtree, Yucaipa, CA

Lundi Belleau, Yucca Valley, CA

Renaldo Gonzalez, Yucca Valley, CA

Darlene Morris, Yucca Valley, CA

Ardis Breslauer, CA

Yasmin Chitty, CA

Sophie Ciurlik Rittenbaum, CA

Gary Connaught, CA

Kim Ferlazzo, CA

Hope Hendricks, CA

Elizabeth Lehr, CA

Alvaro Reyes, CA

Sharon Steuer, CA

Alejandra Tolley, CA

James Yonts, CA

Morgan Folger, Denver, CO

Doug Flack, New York, NY

David Rauenzahn, Portland, OR

Rebecca Brown, Merion Station, PA

Michelle Barbour, Bullard, TX



California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 29, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

CALPIRG Students is a statewide, student-run, and student-funded organization that works to protect the environment, make college affordable, and promote civic engagement. We have over 20,000 dues-paying members across the UC system and have been on campus for almost 50 years advocating for students on issues that students care about most. As part of our ongoing efforts to win better protections for California's ocean, we are submitting 214 signatures from our supporters on campuses across the state in support of Environment California Research & Policy's petitions for rulemaking in the state's adaptive management process for the California marine protected area network.

Each of the 214 people signed the following letter:

To: Governor Gavin Newsom

Sea otters bobbing in the surf. Whales diving deep to feed. Seabirds flying above. Our state's coastline is home to wildlife, large and small. As students and young people, we are proud to live in a state that has taken steps to protect this ocean heritage for future generations. California's network of marine protected areas are places that, just like state parks on land, help protect and restore ocean life.

I urge you to strengthen this network through the Decadal Management Review in line with your important goal of protecting 30 percent of our state waters by 2030. Specifically, I urge you to expand the network to protect the state's last remaining kelp forests, critical homes to fish and sea otters, and to strengthen existing areas that don't yet provide high levels of protection to ocean life.

With your support, California can expand this network of ocean parks to create a brighter future for the ocean life that calls our state home, and hopefully inspire others across the country and around the world to follow our lead.

As young people, we are working everyday to tackle the most pressing problems facing our ocean, our climate and our communities. That's why we are heartened to see state leaders like



Governor Newsom and the state legislature set bold and ambitious goals to protect more of our coastline.

But goals need to be followed by action to ensure the future health and abundance of our ocean wildlife and wild places. That's why our student members have been campaigning for better ocean protections, and why we are excited to have this opportunity in the Decadal Management Review to push our state's groundbreaking network of MPAs forward. An expanded, strengthened network will make our coasts more resilient in the face of climate change and give our ocean life a chance to thrive.

Thank you for this opportunity, and we look forward to working with you to continue to create a better future for California's coasts.

Sincerely,

A handwritten signature in black ink, appearing to read "Clara".

Clara Castronovo
State Board Chair
CALPIRG Students

CALPIRG

Students

Camellia Cartland, Alhambra, CA
Mary Ann Gutierrez, Alhambra, CA
Jaylene Madrid, Apple Valley, CA
Ainsley Wilkin, Apple Valley, CA
TREINA LE, Baldwin Park, CA
Erika Alfaro, Berkeley, CA
Erik Beahrs, Berkeley, CA
Sophia Brodie-Weisberg, Berkeley, CA
Julissa Esparza, Berkeley, CA
Ellen Franzen, Berkeley, CA
Olivia Hom, Berkeley, CA
Kaki Li, Berkeley, CA
Ryan Montis, Berkeley, CA
Stachi Thockchom, Berkeley, CA
Minqi Wang, Berkeley, CA
Caroline Yee, Berkeley, CA
Erinne Yoo, Berkeley, CA
Erik Hart, Bonny Doon, CA
Kofi Addo, Buena Park, CA
Taylor Keppel, Burbank, CA
Monica Wiesener, Calabasas, CA
Radha Jujare, Campbell, CA
Adrian Contreras, Capitola, CA
Jane Giza, Carmichael, CA
Eduardo Angel Hurtado, Chula Vista, CA
Roxanna Braganca, Chula Vista, CA
Rachel Burnett, Concord, CA
Alexis Hammond, Coronado, CA

Mark Danilak, Cupertino, CA
Marea Ayala, Davis, CA
Aster Basnick, Davis, CA
Harriet Chilton, Davis, CA
ReJenai Cloy, Davis, CA
Rena Cohen, Davis, CA
Olivia Lim, Davis, CA
Seth Marshall, Davis, CA
An Nguyen, Davis, CA
Trevor Ottoson, Davis, CA
Madelyn Parker, Davis, CA
Caitlin Perea, Davis, CA
Emmalie Perez, Davis, CA
Aaron Saint John, Davis, CA
Samuel Saxe-Taller, Davis, CA
Percival Singson, Davis, CA
Avery Thau, Davis, CA
Josue Velasquez, Davis, CA
Mackenna Weems, Davis, CA
hilarly wang, Diamond Bar, CA
Ariadne meza-lopez, Diamond Springs, CA
Ria Dadia, Dublin, CA
Aziz Abdulahad, El Cajon, CA
Claire Wang, El Cajon, CA
Eythana Miller, Emeryville, CA
Rosina Miranda, Fair Oaks, CA
Michael Assmus, Fairfax, CA
julie park, Fountain Valley, CA

CALPIRG

Students

Jasmine Avila Soria, Fremont, CA

BaoTRAN Nguyen, Fremont, CA

Alex Sanchez, Fresno, CA

Kelalani Luong-Kha, Garden Grove, CA

Toby Ngo, Garden Grove, CA

Ariaeli Hernandez, Gilroy, CA

Nathan Carbajal, Goleta, CA

Ana Cardenas Gasca, Goleta, CA

Kittamet Chanchaiworawit, Goleta, CA

Lizzie Harding, Goleta, CA

Lluvia Medina, Goleta, CA

Mariana Morton, Goleta, CA

Joanna Tang, Goleta, CA

joanna tang, Goleta, CA

Bradley Thomas, Goleta, CA

Henry Lindhurst, Granite Bay, CA

Peter Le, Hawthorne, CA

adriana zapotitla, Indio, CA

Kimberly Torres, Industry, CA

Andy Fleischer, Irvine, CA

Rhianna Heaster, Irvine, CA

Anisa Johnson, Irvine, CA

Nathaniel Jordan, Irvine, CA

Hudson Lee, Irvine, CA

Henson Ning, Irvine, CA

Ash Quan, Irvine, CA

Lucie Villata, Irvine, CA

Karen Yan, La Jolla, CA

Charlee Marlinga, La Quinta, CA

Gianna Wright, La Quinta, CA

Nathaniel Friedman, Lafayette, CA

Emma Contreras, Lemon Grove, CA

Samikshaya Auanthakrisknan, Lincoln, CA

Elina Dern, Lincoln, CA

Jennifer Gonzalez-Espinoza, Lindsay, CA

Kristi Copeland, Long Beach, CA

Liam Williams, Long Beach, CA

Lexi Crilley, Los Altos Hills, CA

Hoque Akter, Los Angeles, CA

Kimberly Barrueta, Los Angeles, CA

Gabby Ebrahimi, Los Angeles, CA

Bahar Farzaneh, Los Angeles, CA

Janine Fischer, Los Angeles, CA

Tyler Holmes, Los Angeles, CA

Kieran Johnson, Los Angeles, CA

Lucy Kaff, Los Angeles, CA

Daniel Lamas Sanchez, Los Angeles, CA

Dean Lewis, Los Angeles, CA

Kainoa MacDonald, Los Angeles, CA

Darla Marie Duffy, Los Angeles, CA

Alayah Marshall, Los Angeles, CA

Mireya Mondragon, Los Angeles, CA

Lilia Naylor, Los Angeles, CA

Alina Orendain-Calderon, Los Angeles, CA

Shannon Park, Los Angeles, CA

Owen Pogue, Los Angeles, CA

CALPIRG

Students

Lizbeth Rivera, Los Angeles, CA

Alondra Roque, Los Angeles, CA

Jonas Shladovsky, Los Angeles, CA

madelyn spence, Los Angeles, CA

Anita Theng, Los Angeles, CA

Nataly Villasenor, Los Angeles, CA

Rujin Yu, Los Angeles, CA

Jonathan Giang, Monterey Park, CA

Sam Strieter, Moreno Valley, CA

Samantha Strieter, Moreno Valley, CA

Lizzie Su, Mountain House, CA

Angel Parra, Murrieta, CA

Eleanor Vo, Oakland, CA

Alonzo Canete, Ontario, CA

Lori Shen, Ontario, CA

Jacqueline Barnes, Palo Alto, CA

Alicia Acevedo, Perris, CA

Morgen Guzman, Petaluma, CA

Ruth Simon, Placentia, CA

Danae Delgado-Diaz, Pomona, CA

Rachel Lucine, Rancho Cucamonga, CA

Kurubel Tesfay, Rancho Palos Verdes, CA

Cassidy Creighton, Redwood City, CA

Ren Romero, Redwood City, CA

Nicole Castillo, Richmond, CA

Lida Halilovic, Riverside, CA

Ryan LaCasse, Riverside, CA

Hannah Kae Monson, Riverside, CA

Katharine Pan, Riverside, CA

Paige Smith, Riverside, CA

Laurel Tennant, Riverside, CA

Esteban Torres, Riverside, CA

Jennifer Vo, Riverside, CA

Sage Prudente, Rocklin, CA

Olivia Teich, Rohnert Park, CA

Panka Kernacs, Sacramento, CA

Megyn Horton, San Anselmo, CA

Nox Keel, San Clemente, CA

Yingqi Cao, San Diego, CA

Mekayli Claros, San Diego, CA

Avamarie Fromm, San Diego, CA

Camila Gonzalez, San Diego, CA

Benjamin Greenstein, San Diego, CA

Xiaoyu Gui, San Diego, CA

Anne Huynh, San Diego, CA

Michael Iter, San Diego, CA

Katrina Mai, San Diego, CA

Lizard Merrick, San Diego, CA

Ava Ramirez-Brown, San Diego, CA

Dhruv Sehgal, San Diego, CA

Sarah Song, San Diego, CA

Isabella Wagner, San Diego, CA

Lucy Yang, San Diego, CA

Rachel , San Diego, CA

Nadia Nehme, San Francisco, CA

Caroline Sykes, San Francisco, CA

CALPIRG

Students

Tatiana Aguilera, San Leandro, CA

Anjuli Oey, San Leandro, CA

Lilly Wolf-Hoy, San Marcos, CA

Elise Won, San Mateo, CA

Yahir Alexis Leal, Santa Ana, CA

Belen Cordova, Santa Cruz, CA

Chaitan Butte, Santa Monica, CA

Nikolas Brandt, Sebastopol, CA

Natalie Bai, Stanford, CA

Sofia Perez, Temecula, CA

Elena Picinich, Temecula, CA

Jiovanni Esteveec, Temple City, CA

Brent Pitts, Torrance, CA

Eva Pullen, Truckee, CA

Audrey Robertson, Tustin, CA

samael yang, Union City, CA

Emily Arana, Vacaville, CA

melissa fryar, Vacaville, CA

Taylor Arrington, Vallejo, CA

Natalie Rodriguez, West Covina, CA

Sara Morris, Whittier, CA

Claire Griffiths, Yorba Linda, CA

Neilyn Alvarez-Rodriguez, CA

Diana Cardova, CA

Anna Chuang, CA

Dharma Gutierrez Romero, CA

Wafaa Lawai, CA

Markus Mantyvaara, CA

Nayeli Orozco, CA

Kenya Santamaria, CA

Maia Boell, Carroll, IA

Charlie Cronenwett, Leawood, KS

Michael Basmajian, Somerville, MA

Miranda Sih, Minneapolis, MN

Julianna Evinski, Linwood, NJ

John Dunn, Morristown, NJ

Benito Morales, , WA

Ava Png, Weston, WI

Shashank Uma Deepak

Titouan Faure,

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 28th, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

In solidarity with the shared responsibility for the well-being of our planet, particularly the oceans and coastlines we hold dear, we are reaching out as college students to express our firm support for the amplification and extension of California's Marine Protected Area (MPA) network. Understanding the critical importance of maintaining stable kelp ecosystems and safeguarding conserved ocean areas, we are committed to ensuring the prolonged vitality of our oceans and the myriad marine species that inhabit them.

The state of our ocean is at a critical juncture, with escalating global temperatures, declining biodiversity, and a growing number of endangered marine species. Northern California has lost more than 95% of its kelp forests since 2014, and kelp forests statewide have experienced declines over the past decade.¹ Only 50 Pacific leatherback turtles are now found foraging off California's coast, a notable decrease from the 178 Pacific leatherbacks observed from 1990 to 2003.² Marine heatwaves have doubled over the last 30 years, and have become more intense and longer in duration, putting stress on California's marine species and ecosystems.³

In the face of these mounting threats, California has a unique opportunity to take bold and effective action to conserve ocean habitats and ensure a greater abundance of life off our coast. Over two decades ago, the state passed the groundbreaking Marine Life Protection Act (MLPA), which called on the state to use one of the most powerful tools for ocean conservation: marine protected areas (MPAs).

¹ Meredith McPherson et. al, [Large-scale shift in the structure of a kelp forest ecosystem co-occurs with an epizootic and marine heatwave](#), Communications Biology, March 5, 2021

² Benson, Scott R., Karin A. Forney, Jeffrey E. Moore, Erin L. LaCasella, James T. Harvey, and James V. Carretta. ["A Long-Term Decline in the Abundance of Endangered Leatherback Turtles, Dermochelys Coriacea, at a Foraging Ground in the California Current Ecosystem."](#) *Global Ecology and Conservation* 24 (November 2020).

³ García-Reyes, Marisol, Andrew Leising, Rebecca Asch, Steven Bograd, and Tessa M Hill. Rep. Indicators of Climate Change in California, ["Coastal Ocean Temperature"](#), *California Office of Environmental Health Hazard Assessment*, 2022.

MPAs, like state parks on land, protect unique and important ocean habitats from activities that can damage ocean life. Areas that are strongly protected have been shown to be highly effective in conserving biodiversity, enhancing ecosystem resilience, and mitigating the impacts of climate change on our oceans.⁴ By providing areas that serve as buffers against climate change, fully protected MPAs adapt to changing environmental conditions because they better preserve natural interactions within ecosystems, allowing for greater resiliency.⁵

California's network of MPAs, foreseen in the MLPA, celebrated its tenth anniversary last year, and the state's Decadal Management Review (DMR) showed that MPAs effectively protect ocean habitats and increase fishery-targeted species' biomass. The DMR found that the older the MPA, the larger the increase in the biomass of fished species. Some ecological communities like kelp forests and rocky intertidal ecosystems within MPAs appeared more resilient and recovered more quickly after marine heatwaves than similar habitats outside MPAs.⁶ Now, we need to build on this system and maintain California's role as a national and global leader in the fight to protect more ocean habitats.

We support the expansion of the MPA Network to include critical, resilient kelp forests along California's coastline. While these vital and iconic ecosystems have faced declines statewide in recent years, kelp forests in some areas have persisted or bounced back quickly in the face of marine heatwaves and other disturbances.⁷ By expanding protections for these resilient forests under the MLPA, the state can minimize direct human impacts in these relatively healthy areas, helping to ensure their continued persistence and enhancing the effectiveness of restoration efforts for declining kelp ecosystems nearby.

It is also vital that existing California MPAs are able to achieve their stated goals of conserving biodiversity and ecosystem health. We encourage the state to consider increasing protections for MPAs that are currently only lightly or minimally protected, especially in places where weaker or more complicated regulations lead to poor compliance and enforcement. Research has shown that highly and fully protected areas, where few if any destructive or extractive activities are allowed, provide greater ecological benefits than lightly or minimally protected areas.⁸

As college students, we keenly feel the urgency to address the environmental crises, particularly along California's coast. Having grown up witnessing the impacts of climate change, it's clear

⁴ Arafteh-Dalmau et al., [Integrating climate adaptation and transboundary management: Guidelines for designing climate smart marine protected areas](#), One Earth 6, 1–19 November 17, 2023 ^a 2023 Published by Elsevier Inc.

⁵ Jankowska, Emilia, et al. "[Climate Benefits from Establishing Marine Protected Areas Targeted at Blue Carbon Solutions](#)." *Proceedings of the National Academy of Sciences*, vol. 119, no. 23, 2022.

⁶ California Department of Fish and Wildlife. (2022). California's Marine Protected Area Network Decadal Management Review.

⁷ California Department of Fish and Wildlife. (2022). California's Marine Protected Area Network Decadal Management Review.

⁸ Ibid Kirsten Grorud-Colvert *et al.*, [The MPA Guide: A framework to achieve global goals for the ocean](#). *Science* **373**, eabf0861(2021). DOI:10.1126/science.abf0861

that action is needed to limit harm to the environment. That's why we urge the Fish and Game Commission to make significant changes in preserving and protecting our vast ocean habitats, ensuring a meaningful and lasting impact for generations to come.

Our ocean is not just a provider of fresh air, diverse wildlife, and breathtaking scenery; it's also an enigma that calls us to explore and uncover its secrets. As college students, we believe it's our duty to be at the forefront of national and global efforts, taking bold steps to safeguard the ocean. This commitment ensures its future and the welfare of communities dependent on it for survival and prosperity.

In conclusion, we strongly urge you, Fish and Game Commissioners, to champion the expansion and fortification of California's network of Marine Protected Areas, with a particular focus on safeguarding kelp forests and reinforcing the protection of existing MPAs. By doing so, you will leave a lasting legacy of environmental stewardship.

Thank you for your unwavering commitment to the welfare of our ocean and for considering this urgent matter. Together, we can ensure a healthier, more abundant future for the unique marine ecosystems that define California.

Sincerely,

Clara Castronovo
Board Chair
CALPIRG Students

Brandi Sanchez
President
Ecology Behavior and Evolution Club at UC San Diego

Brandi Sanchez
President
Pollinator Club at UC San Diego

Aiden Ledbetter
President
Davis College Democrats

Hannah Hughes
President
5C Plant-Based Mission at the Claremont Colleges



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

November 30th, 2023

Re: Petition to Modify CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests; Petition to Increase Level of Protection and Streamline Enforcement for Several California State MPAs

Dear President Sklar and Honorable Commissioners,

From the foothills of the Sierras to the seaside of the Central Coast, Californians care about our ocean and the life that calls it home. That's why we are submitting the attached 7,549 signatures in support of our petitions for rulemaking in the Decadal Management Review adaptive management process.

Each of the 7,549 people signed the following letter:

Dear Governor Newsom,

California's coastline is home to stunning beaches, amazing wildlife, and is a true treasure for everyone who lives in or visits our state. That's why we've invested in protecting this ocean heritage through the creation of our state network of marine protected areas. Just like state parks on land, these areas help protect and restore ocean life.

Now we have an opportunity to strengthen this network through the Decadal Management Review. I urge you to use this process to advance your important goal of protecting 30% of our state waters by 2030. Specifically, I urge you to expand the network to protect the state's last remaining kelp forests, critical homes to fish and sea otters, and to strengthen existing areas that don't yet provide high levels of protection for ocean life.

With your leadership, California can expand this network of ocean parks to create a brighter future for our state's ocean life and continue to lead the country in ocean conservation.

Sincerely,

By expanding the state's MPA network to better protect areas of stable kelp and by strengthening protections for areas not currently achieving their conservation outcomes due to weak or confusing regulations, the state can help our coasts adapt and thrive in the face of rising temperatures and emerging threats.

With your leadership, we can create a better future for California's coastal ecosystems and the wildlife that calls them home.

Sincerely,

Laura Deehan
Director
Environment California
Environment California Research & Policy Center



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Betty Canter, Agoura Hills, CA
Cathy Crum, Agoura Hills, CA
Diane King, Agoura Hills, CA
Tamara Lesser, Agoura Hills, CA
Brian Jeffery, Aguanga, CA
Amber Bales, Alameda, CA
John Brooks, Alameda, CA
Barbara Cone, Alameda, CA
Zachary Gray, Alameda, CA
Mike Kehl, Alameda, CA
Angie Klein, Alameda, CA
Andre Kruglikov, Alameda, CA
Brian J McGuire, Alameda, CA
Andrew Mueckenberger, Alameda, CA
Alexandra Mummery, Alameda, CA
Jack Rafferty, Alameda, CA
Gina Rivera, Alameda, CA
Barbara Snethen@gmail.com, Alameda, CA
James Stehr, Alameda, CA
Joshua Summit, Alameda, CA
Kathryn Warner, Alameda, CA
Ehren Mierau, Alamo, CA
Sandra Beckley, Albany, CA
Linda Berkowitz, Albany, CA
Susan Burr, Albany, CA
Bart Grossman, Albany, CA
Tami Jordan, Albany, CA
Raymond Neutra, Albany, CA
Paula Rini, Albany, CA
Steven Schultz, Albany, CA

Kym Sterner, Albany, CA
Michael Sullivan, Albany, CA
Araceli Aviles, Alhambra, CA
Cindy Coty, Alhambra, CA
Lynda Harris, Alhambra, CA
Joseph Manza, Alhambra, CA
John Perez, Alhambra, CA
Alec Taratula, Alhambra, CA
Annetta Bettis, Aliso Viejo, CA
Andrea Bonnett, Altadena, CA
Jason Capell, Altadena, CA
Patrick Ela, Altadena, CA
Andre Ettinger, Altadena, CA
Beth Herndobler, Altadena, CA
Joan Kahn, Altadena, CA
Althea Kennedy, Altadena, CA
Carol Lachata, Altadena, CA
Linda Nishio, Altadena, CA
Julie Parker, Altadena, CA
Allan Wasserman, Altadena, CA
Christina Imhoof, An Diego, CA
Bruce Bluestein, Anaheim, CA
Drew Cartwright, Anaheim, CA
Thuan Do, Anaheim, CA
Robert Jansen, Anaheim, CA
Charles Richmond, Anaheim, CA
Michelle Smith, Anaheim, CA
Natalie Blasco, Anderson, CA
Donna Crane, Anderson, CA
lynmari calabi, Angwin, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Sharon Lieberman, Annapolis, CA
Jessica Mitchell-Shihabi, Antelope, CA
Shirene Saunby, Antelope, CA
Lindsey Kalfsbeek, Antioch, CA
Bernadine Sequeira, Antioch, CA
James Alfred Smith, Jr., Antioch, CA
Stanley Hodge, Apple Valley, CA
Norbert Benecke, Aptos, CA
LeAnn Bjelle, Aptos, CA
Katherine Doctor, Aptos, CA
Michele Faia, Aptos, CA
Jane Goddard, Aptos, CA
Jeanne Lance, Aptos, CA
Alan Schenck, Aptos, CA
Edward Shapiro, Aptos, CA
Denis Elliott, Arcadia, CA
Jason Park, Arcadia, CA
Jeanne Roberts, Arcadia, CA
Mikal Baker, Arcata, CA
Connie Lindgren, Arcata, CA
Sophie Rocheleau, Arcata, CA
Jerry McNamara, Arnold, CA
Brian Harris, Arroyo Grande, CA
Linda Kohler-Trott, Arroyo Grande, CA
Landon Neustadt, Arroyo Grande, CA
Joseph Read, Arroyo Grande, CA
Gregory Ross, Arroyo Grande, CA
Thomas Tucker, Arroyo Grande, CA
Corinne Huckaby, Atascadero, CA
Scott Burgess, Atascadero, CA

Ellen Evans, Atascadero, CA
John Farhar, Atascadero, CA
Patti Frey, Atascadero, CA
Kelly Martin, Atherton, CA
James Neupert, Atherton, CA
Jena Norton, Atwater, CA
Marilyn Barthelow, Auburn, CA
Caralee Clarke, Auburn, CA
Roxanne Hill, Auburn, CA
David Hooper, Azusa, CA
Solomon Pulgar, Azusa, CA
Roger Anderson, Bakersfield, CA
Matthew Barajas, Bakersfield, CA
Jim Carnal, Bakersfield, CA
Caryn Cowin, Bakersfield, CA
Richard Reed, Bakersfield, CA
Yolanda Berumen, Baldwin Park, CA
Jesse Calderon, Baldwin Park, CA
Cherilyn Cibelli, Beaumont, CA
Mohamed Chahine, Bell Gardens, CA
Yazmin Gonzalez, Bellflower, CA
Jason Nolasco, Bellflower, CA
Shiela Cockshott, Belmont, CA
Giovannina Fazio, Belmont, CA
Valerie Gould, Belmont, CA
Kimberly Knapp, Belmont, CA
Tracy Molyneux, Belmont, CA
Robert Sharp, Belmont, CA
Angela Gantos, Belvedere Tiburon, CA
Barbara Meislin, Belvedere Tiburon, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Sandra Wolfe, Belvedere Tiburon, CA

Nancy Phillips, Ben Lomond, CA

Dorothy Renaud, Ben Lomond, CA

Raf Strudley, Ben Lomond, CA

Colleen Walter, Ben Lomond, CA

Judith Amlin, Benicia, CA

Cathy Bennett, Benicia, CA

Peter Bray, Benicia, CA

Dannys Cody, Benicia, CA

Joni Grisham, Benicia, CA

Nancy Lund, Benicia, CA

Twila Newey, Benicia, CA

Marylee Parr, Benicia, CA

Christian Phillips, Benicia, CA

Annina Puccio, Benicia, CA

Robert Quarrick, Benicia, CA

Jessica Smith, Benicia, CA

Mimi Abers, Berkeley, CA

Inger Acking, Berkeley, CA

Stephen Alpert, Berkeley, CA

Pamela Baird, Berkeley, CA

Robert Baird, Berkeley, CA

Karl Battenbowman, Berkeley, CA

James Blakly, Berkeley, CA

Lois Brubeck, Berkeley, CA

Nancy Carleton, Berkeley, CA

Eileen Cohen, Berkeley, CA

Craig Collins, Berkeley, CA

Alexandra Crisafulli, Berkeley, CA

Janis Dairiki, Berkeley, CA

Anya Davis, Berkeley, CA

Richard Entenman, Berkeley, CA

Christopher Evans, Berkeley, CA

Hyacinth Fleming, Berkeley, CA

Ellen Franzen, Berkeley, CA

Rachel Gordon, Berkeley, CA

Martha Griswold, Berkeley, CA

Stefanie Guynn, Berkeley, CA

Doug Hamilton, Berkeley, CA

Mary Harte, Berkeley, CA

Curran Honorah, Berkeley, CA

Holly Howard, Berkeley, CA

Marjory Keenan, Berkeley, CA

Betsy Kelly, Berkeley, CA

Morgan Lambert, Berkeley, CA

Catherine Lerza, Berkeley, CA

Alex Madonik, Berkeley, CA

Robert Magarian, Berkeley, CA

Rebecca Meyer, Berkeley, CA

Ann Myers, Berkeley, CA

Jaleh Niazi, Berkeley, CA

Kaveh Niazi, Berkeley, CA

Jonathan Packman, Berkeley, CA

Kristine Panik, Berkeley, CA

Heather Pierce, Berkeley, CA

Janet Ramsay, Berkeley, CA

Catherine Rauch, Berkeley, CA

Janette Reid, Berkeley, CA

Rachel Resnikoff, Berkeley, CA

Anthony Rhodes, Berkeley, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Bob Schildgen, Berkeley, CA

Sandra Smith, Berkeley, CA

Lenore Sorensen, Berkeley, CA

michael sullivan, Berkeley, CA

Debbie Tenenbaum, Berkeley, CA

Timothy Volz, Berkeley, CA

Dandelo Waters, Berkeley, CA

Jonathan Weinstock, Berkeley, CA

Helene Whitson, Berkeley, CA

John Wolfe, Berkeley, CA

Sara Zimmerman, Berkeley, CA

Lori Ginsburg, Beverly Hills, CA

Beverly Harris, Beverly Hills, CA

Ilene Proctor, Beverly Hills, CA

Trudie Haven, Big Bear City, CA

Valerie Hart, Big Pine, CA

Marianne Brettell-Vaughn, Bishop, CA

Michael Harris, Bodega Bay, CA

Tina Ann, Bolinas, CA

Betsyann Gallagher, Bolinas, CA

Sean Thackrey, Bolinas, CA

Vivian Sherrill, Bonita, CA

Ed Atkins, Boulder Creek, CA

Moiria Bischoff, Boulder Creek, CA

Trudi James, Boulder Creek, CA

Ray Schwarz, Boulder Creek, CA

Kathryn St. John, Boulder Creek, CA

Jack Kline, Brentwood, CA

Chris Zahnd, Brentwood, CA

Stephanie Glatt, Buellton, CA

Jennifer Jerlstrom, Buena Park, CA

Jessica Likens, Buena Park, CA

Cathy Biermann, Burbank, CA

Sandra Christopher, Burbank, CA

Ryan Davis, Burbank, CA

Katyana Farzanrad, Burbank, CA

Jennifer Hurdle, Burbank, CA

Tyson Martin, Burbank, CA

Gina Richardson, Burbank, CA

Rosalie Salvato, Burbank, CA

Gilbert Saucedo, Burbank, CA

Lucinda Walker, Burbank, CA

Kenneth Aron, Burlingame, CA

Jeffrey Krolik, Burlingame, CA

Lara McDonald, Burlingame, CA

Kathryn Morton, Burlingame, CA

Laura Somers, Burlingame, CA

Judy Boeken, Calabasas, CA

Vivian Deutsch, Calabasas, CA

Claude Duss, Calabasas, CA

Veronica Pepe, Calabasas, CA

Kalyna Snylyk, Calabasas, CA

Terry Spellman, California City, CA

David Burtis, Calistoga, CA

Martha Casselman, Calistoga, CA

Scott Hester, Calistoga, CA

Susan Beil, Camarillo, CA

Nancy Borelli, Camarillo, CA

Catherine Burriss, Camarillo, CA

Carol Cressy, Camarillo, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Cherie Garrett, Camarillo, CA
Larry Gassan, Camarillo, CA
Deidre Leonard, Camarillo, CA
Carla Marting, Camarillo, CA
Jerami Prendiville, Camarillo, CA
Charlie Tetoni, Camarillo, CA
Ann Walker, Camarillo, CA
Ted Key, Cambria, CA
Linda Kierce, Cambria, CA
Richard Shepard, Cambria, CA
Lena Fine, Campbell, CA
Barbara Mason, Campbell, CA
Anne Swanson, Campbell, CA
Tony Vega, Campbell, CA
Mark Giordani, Canoga Park, CA
Debra Moss, Canoga Park, CA
Barbara Dinius, Canyon Country, CA
Yrineo Vasquez, Canyon Country, CA
Ben Brucker, Capistrano Beach, CA
John Glina, Capitola, CA
Edith Leni, Capitola, CA
Dana Herman, Cardiff, CA
William Stern, Cardiff, CA
Matt Bender, Cardiff by the Sea, CA
Suzanne Mindlin, Cardiff By The Sea, CA
Nance Robertson, Cardiff by the Sea, CA
Lisa Adamson, Carlsbad, CA
Shawna Bader, Carlsbad, CA
Judy Burzell, Carlsbad, CA
Chihwu Chang, Carlsbad, CA

Gerald Good, Carlsbad, CA
Kendra Haddock, Carlsbad, CA
Matthew Huber, Carlsbad, CA
Luis Jaramillo, Carlsbad, CA
Kevin Krause, Carlsbad, CA
Phyllis Lackey, Carlsbad, CA
ben steen, Carlsbad, CA
Greg Thomsen, Carlsbad, CA
Catherine Valadez, Carlsbad, CA
Damon Anderson, Carmel, CA
John Hall, Carmel, CA
Diana North, Carmel, CA
Rosalie Pinkert, Carmel, CA
judi zaches, Carmel, CA
Sheila Sheppard, Carmel By The Sea, CA
Herbert Aarons, Carmel Valley, CA
Janis Wilson-Pavlik, Carmel Valley, CA
Elizabeth Adan, Carmichael, CA
William Rasmussen, Carmichael, CA
Jo Souvignier, Carmichael, CA
Karen Taylor, Carmichael, CA
Jack Tolomei, Carmichael, CA
Jill Vanneman, Carmichael, CA
mary vollstedt, Carmichael, CA
Roxanne Coke, Carpinteria, CA
William Hornung, Carpinteria, CA
Gail Marshall, Carpinteria, CA
Amy Mcdonald, Carpinteria, CA
Linda Reimel, Carpinteria, CA
Scott Van Fossen, Carpinteria, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Glen Deardorff, Castro Valley, CA
Julie Greenfield, Castro Valley, CA
Sue Hall, Castro Valley, CA
Pati Jio, Castro Valley, CA
Harriet Skelly, Castro Valley, CA
Arthur Squillante, Castro Valley, CA
Barbara Harper, Castroville, CA
John Hill, Castroville, CA
Armando MacMillan, Castroville, CA
Phillip Cripps, Cathedral City, CA
Anne Gannon, Cathedral City, CA
Janis Michaels, Cathedral City, CA
Wallace Rhine, Cazadero, CA
Eric Hironymous, Cedarville, CA
Marie Perry, Ceres, CA
Meredith Cox, Cerritos, CA
James Lindgren, Cerritos, CA
Patti Boniface, Chatsworth, CA
Alejandra Castro, Chatsworth, CA
Miguel Loayza, Chatsworth, CA
Binh Tang, Chatsworth, CA
Barbara Wasserman, Chatsworth, CA
Mary Caulfield, Chicago Park, CA
Garrett Alden, Chico, CA
Valerie Fannin, Chico, CA
Dee Randolph, Chico, CA
Abigail Rizzo, Chico, CA
Sonya Rose, Chico, CA
Linda Sheppard, Chico, CA
Kate Transchel, Chico, CA

Dale Beaver, Chula Vista, CA
Denise Berrian, Chula Vista, CA
John Brown, Chula Vista, CA
Rita Clement, Chula Vista, CA
Alfa Santos, Chula Vista, CA
David Sorce, Chula Vista, CA
John Teevan, Chula Vista, CA
Susana Vega, Chula Vista, CA
Cari Chenkin, Citrus Heights, CA
Karen and Edward Osgood, Citrus Heights, CA
Aaron Shoup, Citrus Heights, CA
Robert Blackey, Claremont, CA
Christopher Hayes, Claremont, CA
Steven Hoelke, Claremont, CA
John Maher, Claremont, CA
Cheryllynne Ofstedahl, Claremont, CA
Laurel Tucker, Claremont, CA
Marsha Tudor, Claremont, CA
Erica Tyron, Claremont, CA
Victoria Verches, Claremont, CA
Patricia Goodson, Clearlake Oaks, CA
John Kwiatkowski, Cloverdale, CA
Kim Peterson, Cloverdale, CA
Dolores Amato, Clovis, CA
Tara Hagen, Clovis, CA
Thomas Kaschak, Clovis, CA
Diane Hestich, Colton, CA
Fred Wright, Colton, CA
Mindy Alegra, Concord, CA
Stephanie Clark, Concord, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Susan King, Concord, CA
Sheri Kuticka, Concord, CA
Robert Larsen, Concord, CA
Paul Lowry, Concord, CA
James R Monroe, Concord, CA
Nancy Pratt, Concord, CA
Cindy Sundberg, Concord, CA
Anne Spesick, Cool, CA
Jennifer Artunian, Corona, CA
Lisa Laflame, Corona, CA
Linda Oeth, Corona del Mar, CA
Tad Sullivan, Corona del Mar, CA
Sanja Dimitrijevic, Coronado, CA
Elizabeth Luning, Corralitos, CA
Ronald Gremban, Corte Madera, CA
Jennifer Lawson, Corte Madera, CA
Abigail Millikan States, Corte Madera, CA
Rachelle Cox, Costa Mesa, CA
Hieu Dang, Costa Mesa, CA
Sharon Daniel, Costa Mesa, CA
Victoria Gagniere, Costa Mesa, CA
Kathlyn Grabenstein, Costa Mesa, CA
Jennifer Greenwalt, Costa Mesa, CA
Rickie Moore, Costa Mesa, CA
Kim Nero, Costa Mesa, CA
Lisa Piner, Costa Mesa, CA
Lizzie Vierra, Costa Mesa, CA
Janice Emery, Cotati, CA
Jane Lyon, Cotati, CA
R Brancheau, Covina, CA

Wendy Monterrosa, Covina, CA
Angela Park, Covina, CA
Sandy Williams, Covina, CA
April Quigley, Crescent City, CA
Ronald Thompson, Crescent City, CA
Susannah Baxendale, Culver City, CA
Thomas Carlton, Culver City, CA
Jill Davine, Culver City, CA
Gwendoline Gansky, Culver City, CA
Vernette Griffee, Culver City, CA
Walter Lamb, Culver City, CA
Andrew Meyer, Culver City, CA
Patricia Morgan, Culver City, CA
Chris Nevil, Culver City, CA
Alicia Tan, Culver City, CA
Anita Thomason, Culver City, CA
Keil Albert, Cupertino, CA
Peg Albrets, Cupertino, CA
Nora Elsokkary, Cupertino, CA
Wallace Iimura, Cupertino, CA
Marte Thompson, Cupertino, CA
Lana Wertz, Cupertino, CA
Susie Leonard, Cypress, CA
Noah H, Daly City, CA
Susan Klingman, Daly City, CA
Bonnie Miyake, Daly City, CA
Katya Siguenza, Daly City, CA
earl west, Daly City, CA
John Goodman, Dana Point, CA
Nancy Amini, Danville, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Erlan Bliss, Danville, CA
Priscilla Rich, Danville, CA
Catherine Alexander, Davis, CA
Kristen Douglas, Davis, CA
Lisa Goldberg, Davis, CA
Daniel Gusfield, Davis, CA
Verne Harlan, Davis, CA
Nancy Hiestand, Davis, CA
Kathryn Litton, Davis, CA
Frances McChesney, Davis, CA
Jack Milton, Davis, CA
Katherine Muir, Davis, CA
Donna Russell, Davis, CA
Rebecca Ryland, Davis, CA
Penelope Shackelford, Davis, CA
Timothy Tutt, Davis, CA
Maryla Wade, Davis, CA
Arleene Antin, Del Mar, CA
Jean Balgrosky, Del Mar, CA
Bruce Bekkar, MD, Del Mar, CA
Laura Converse, Del Mar, CA
Lynne Small, Del Mar, CA
Judy Dotson, Denair, CA
Clyde Weston, Descanso, CA
Jacque Carlson, Desert Hot Springs, CA
Maureen McDonald, Desert Hot Springs, CA
Nancy Schelling, Desert Hot Springs, CA
Brian Chen, Diamond Bar, CA
Marilyn Eng, Diamond Bar, CA
Jeffrey Jenkins, Diamond Bar, CA

Ruth Buxman, Dinuba, CA
Sharon Byers, Downey, CA
Deborah Ross, Duarte, CA
Sarah Sismondo, Duarte, CA
Eloise Hamann, Dublin, CA
Mohan Sakhrani, Dublin, CA
Robert Baker, Dunlap, CA
Rev. Will Agee, El Cajon, CA
Kelley Bishop, El Cajon, CA
Anna Brzuza, El Cajon, CA
Christina Hartonczyk, El Cajon, CA
Meredith Kennedy, El Cajon, CA
Anna Salvatierra, El Cajon, CA
Sadie Sullivan-Greiner, El Cajon, CA
Elizabeth Bone, El Cerrito, CA
Byron Brown, El Cerrito, CA
Daniel Elkan, El Cerrito, CA
Emiliano Gomez, El Cerrito, CA
Paul Hughes, El Cerrito, CA
Jan Jones, El Cerrito, CA
Kin Jung, El Cerrito, CA
Judith Libow, El Cerrito, CA
Carol Long, El Cerrito, CA
Robert Naumann, El Cerrito, CA
Judith Rogers, El Cerrito, CA
Cynthia Williams, El Cerrito, CA
Tracy Bryan, El Dorado Hills, CA
Virginia Shaw, El Dorado Hills, CA
Judd Stark, El Dorado Hills, CA
David Marsland, El Granada, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Terry Blount, El Segundo, CA

Alison Hart, El Segundo, CA

Matthew Lubs, El Segundo, CA

Stacy Sealock, El Segundo, CA

Claudia Avila, El Sobrante, CA

Martha Booz, El Sobrante, CA

Garth Casaday, El Sobrante, CA

Katharine Handler, El Sobrante, CA

Julie Harris, El Sobrante, CA

Carol Kinser, Elk Grove, CA

Marta Williams, Elk Grove, CA

Kathleen Stutz, Elmira, CA

Amanda Caskey, Emeryville, CA

Claudia Garcia, Emeryville, CA

Maia Orr, Emeryville, CA

Vijaya Rogers, Emeryville, CA

Kimberley Sevcik, Emeryville, CA

Elizabeth Staton, Emeryville, CA

Cheryl Alexander, Encinitas, CA

Cathy Bacquet, Encinitas, CA

Brett Colby, Encinitas, CA

Brian Collins, Encinitas, CA

Caleb Fitzpatrick, Encinitas, CA

Devin Frei, Encinitas, CA

Victor Hernandez, Encinitas, CA

Shawn Johnson, Encinitas, CA

William Paxton, Encinitas, CA

Eric Pence, Encinitas, CA

Sheila Smith, Encinitas, CA

Steve White, Encinitas, CA

Lucy Hart, Encino, CA

Dale Crawford, Escondido, CA

Nancy Gangi, Escondido, CA

Ken Sanford, Escondido, CA

Andy Tomskey, Escondido, CA

Kristi Wilson, Escondido, CA

Delight Wisniewski, Escondido, CA

Rena Zaman-Zade, Escondido, CA

Melissa Birch, Eureka, CA

patricia kanzler, Eureka, CA

Gina Ness, Eureka, CA

Mary Schweickert, Eureka, CA

Susan Tatro, Eureka, CA

Beti Webb Trauth, Eureka, CA

Geraldine Card, Exeter, CA

Melissa Christopher, Fair Oaks, CA

Brian Mcclintock, Fair Oaks, CA

Teresa Rauschkolb, Fair Oaks, CA

Blair Reynolds, Fair Oaks, CA

Kathleen Jackson, Fairfax, CA

Aria Sternik, Fairfax, CA

Sagar Wanaselja, Fairfax, CA

William Lane, Fairfield, CA

Adriana Llamas, Fairfield, CA

Kathleen Morgan, Fallbrook, CA

Andrea Boone, Felton, CA

Alice Kelly, Felton, CA

Pamela Morgan, Felton, CA

Michelle Alex, Folsom, CA

Jessica Dardarian, Folsom, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Veronica Mohn, Foothill Ranch, CA

Larry Hanson, Forestville, CA

Thomas Hawkins, Fort Bragg, CA

Lonnie Mathieson, Fort Bragg, CA

Katherine Patterson, Fort Bragg, CA

Kathleen Gause, Fountain Valley, CA

Frances Morrison, Fountain Valley, CA

Kenneth Arnold, Fountain Vly, CA

Mary Brooks, Frazier Park, CA

Susan Schrager, Frazier Park, CA

Gina Jager, Fremont, CA

Michael Maddon, Fremont, CA

Utkarsh Nath, Fremont, CA

Erica Pace, Fremont, CA

Nancy Palmer, Fremont, CA

Adelle Regalia, Fremont, CA

Christopher Ware, Fremont, CA

Jack Whealen, Fremont, CA

Charlotte Alldredge, Fresno, CA

Gerald Bill, Fresno, CA

Michael Bordenave, Fresno, CA

Lynn Campbell, Fresno, CA

Joseph Catania, Fresno, CA

Gilda Cox, Fresno, CA

Elizabeth Fralicks, Fresno, CA

Rosemary Gastelo, Fresno, CA

Robert Glover, Fresno, CA

Yolanda Gomez, Fresno, CA

Nancy McCormick, Fresno, CA

Gayle Mitchell, Fresno, CA

Emily Poulsen, Fresno, CA

Lynda Robinson, Fresno, CA

Walter Ullrich, Fresno, CA

Lowell Young, Fresno, CA

Donna Grampp, Fullerton, CA

Lynn Hoang, Fullerton, CA

Evan McDermitt, Fullerton, CA

Colleen Wieghorst, Fullerton, CA

Christine Doyka, Garberville, CA

Ana Gonzalez, Garden Grove, CA

Laurie Kinnings, Garden Grove, CA

Dana May, Garden Grove, CA

Walter Reece, Garden Grove, CA

Suellen Carroll, Garden Valley, CA

Marcella Andrade, Gilroy, CA

Miguel Avila, Gilroy, CA

Mary Ludwick, Gilroy, CA

Jidith Seehafer, Gilroy, CA

Joe Mangiantini, Glen Ellen, CA

Alejandro Artigas, Glendale, CA

Carol Bennett, Glendale, CA

Timothy Brock, Glendale, CA

R. Leslie Choi, Glendale, CA

Michelle Colletti, Glendale, CA

James Grant, Glendale, CA

Dena Guerry Henriquez, Glendale, CA

Elise Kalfayan, Glendale, CA

Valerie Keiser, Glendale, CA

Denise Meyer, Glendale, CA

Faatui Panama, Glendale, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Patricia Pei, Glendale, CA
Bari Phillips, Glendale, CA
John Price, Glendale, CA
Ann Sattenspiel, Glendale, CA
Jordan Vanderlinde, Glendale, CA
Laura Flanders, Glendora, CA
Diana Lozano, Glendora, CA
Larissa Shen, Glendora, CA
Dawnielle Burich, Goleta, CA
Irene Cooke, Goleta, CA
Martin Henderson, Goleta, CA
Larry A Kaempf, Goleta, CA
Jennifer Matthews, Goleta, CA
Kevin McGarry, Goleta, CA
Wendy Morgan, Goleta, CA
Michelle Profant, Goleta, CA
Z. Reisz, Goleta, CA
Julie Rodgers, Goleta, CA
Deborah Williams, Goleta, CA
Dennis Hammermeister, Granada Hills, CA
Brook Hall, Granite Bay, CA
Evette Andersen, Grass Valley, CA
Kendra Anderson, Grass Valley, CA
Susanne Bader, Grass Valley, CA
Ellen Clephane, Grass Valley, CA
Bonny Davis, Grass Valley, CA
Anna Drummond, Grass Valley, CA
John Everett, Grass Valley, CA
Kathleen Shaffer, Grass Valley, CA
Mark Toelkes, Grass Valley, CA

Abbie Whitehead, Grass Valley, CA
Peter Yaholkovsky, Grass Valley, CA
Daniel Healy, Green Valley Lake, CA
Courtney Benham, Greenbrae, CA
patricia klein, Greenbrae, CA
Dennis McVey, Greenbrae, CA
Meredith Mill, Greenbrae, CA
Jill Mistretta, Greenbrae, CA
DYAN PIKE, Greenbrae, CA
Benjamin Rowe, Greenbrae, CA
Joan Smith, Greenbrae, CA
Kate Lunn, Grover Beach, CA
Marc Fuller, Guadalupe, CA
Carlos Madrigal, Hacienda Heights, CA
Edith Bella, Half Moon Bay, CA
Irene Madrid, Half Moon Bay, CA
Christine Olivero, Half Moon Bay, CA
Wade Painter, Half Moon Bay, CA
Tim Riley, Half Moon Bay, CA
L. Watson, Half Moon Bay, CA
Claire Jones, Hanford, CA
Nancy Plumer, Harbor City, CA
Deb B, Hawthorne, CA
Roberta Barr, Hawthorne, CA
Bonnie Maloney, Hawthorne, CA
Rachel Asturias, Hayward, CA
Elliott Betty, Hayward, CA
Gregory Fite, Hayward, CA
Evelyn Gonzalez, Hayward, CA
Sherman Lewis, Hayward, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Laurie Price, Hayward, CA
Rev. Jonathan Tan, Hayward, CA
Bretta Rambo, Healdsburg, CA
Elizabeth Rue, Healdsburg, CA
Paula Baeza, Hemet, CA
Lily Mejia, Hemet, CA
REBECCA DESMOND, Hercules, CA
Gloria Evans-Young, Hercules, CA
Linda Monosmith, Hermosa Beach, CA
Dency Nelson, Hermosa Beach, CA
Geri Shapiro, Hermosa Beach, CA
Julie Knutson, Hesperia, CA
Shanna Rojas, Hesperia, CA
Juanita Westberg, Hesperia, CA
P Perry, Hidden Valley Lake, CA
Renee O'Neil, Highland, CA
Robert Vargas, Highland, CA
Kathleen Callaghan, Hollister, CA
Monica Sharp, Holtville, CA
Tina Moody, Hopland, CA
Paul Barkmeier, Huntington Beach, CA
Buffie Channel, Huntington Beach, CA
Carol Comparsi, Huntington Beach, CA
Laura Davidson, Huntington Beach, CA
Tim Denton, Huntington Beach, CA
Vicki Dipaolo, Huntington Beach, CA
Myrrha Eberly, Huntington Beach, CA
Kathy Hanson, Huntington Beach, CA
Beverly Heiberg, Huntington Beach, CA
Vicki Hughes, Huntington Beach, CA

Meaghan Jones, Huntington Beach, CA
Mike Kelly, Huntington Beach, CA
Thaddeus Kopacki, Huntington Beach, CA
Michael Marr, Huntington Beach, CA
Michael McMahan, Huntington Beach, CA
Michael Ozaki, Huntington Beach, CA
James Preston, Huntington Beach, CA
Peggy Rosen, Huntington Beach, CA
Brandon Ross, Huntington Beach, CA
Fred Schloessinger, Huntington Beach, CA
Rita Spira, Huntington Beach, CA
mary tindukasiri, Huntington Beach, CA
Carol Acosta, Idyllwild, CA
Jason Leichter, Imperial Beach, CA
Lindsay Erickson, Indio, CA
William Heagy, Indio, CA
Matthew Humphrey, Indio, CA
Robert Ikehorn, Indio, CA
Karen Seeberg, Indio, CA
Sheila Breeding, Inglewood, CA
Kathleen McConn, Inglewood, CA
Terri Mckown, Inyokern, CA
Charlotte Rolle, Ione, CA
James Beirne, Irvine, CA
Rosanne Bravo, Irvine, CA
Jill Dunham, Irvine, CA
Robert Glasser, Irvine, CA
Mehdi Jazayeri, Irvine, CA
Wendy Kleeb, Irvine, CA
Joseph Lambert, Irvine, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Robin Weirich, Irvine, CA

Alexander Acuna, Isla Vista, CA

Dee Leineke, Jackson, CA

Michael Anderson, Jamul, CA

Gillian Parrillo, Kelseyville, CA

Carmela Perez, Kelseyville, CA

Darcy Skarada, Kelseyville, CA

Steve Caramia, Kensington, CA

John Kramer, Kensington, CA

Nicole Bergman, La Canada Flintridge, CA

LouAnne Insprucker, La Canada Flintridge, CA

Nickolaos Mastrodemos, La Canada Flintridge, CA

Alison Brett, La Crescenta, CA

Ruth Jones, La Crescenta, CA

Kimberley Moreno, La Crescenta, CA

Ellen Segal, La Crescenta, CA

Linda Wright, La Crescenta, CA

Michael Rodriguez, La Habra, CA

Glenn Jones, La Honda, CA

Nathan Brenner, La Jolla, CA

Sharon Laabs, La Jolla, CA

Michele Lang-Hillyard, La Jolla, CA

Susan Mc Candless, La Jolla, CA

Howard Moss, La Jolla, CA

Dave Paterson, La Jolla, CA

Anita Speier, La Jolla, CA

Elyse Tierney, La Jolla, CA

Joanee Ude, La Jolla, CA

Michael Beam, La Mesa, CA

Sietse Peter Boersma, La Mesa, CA

Robert Buchanan, La Mesa, CA

Christina Jackson, La Mesa, CA

Brenda Thompson, La Mesa, CA

Richard Vestal, La Mesa, CA

Harlan Lebo, La Mirada, CA

David Maraszek, La Mirada, CA

Rodney Mcguire, La Quinta, CA

Claudia Monahan, La Quinta, CA

Rhonda Oliver, La Quinta, CA

Thomas McVay, Ladera Ranch, CA

Aaron Chan, Lafayette, CA

Sakti Das, Lafayette, CA

S Herold, Lafayette, CA

Elsa Ramos, Lafayette, CA

Alice Stauffer, Lafayette, CA

Patricia Appel, Laguna Beach, CA

Stacy Cornelius, Laguna Beach, CA

Daniel Haspert, Laguna Beach, CA

Adam Kaplan, Laguna Beach, CA

Robert Reed, Laguna Beach, CA

Leif Trondsen, Laguna Beach, CA

Margaret White, Laguna Beach, CA

Susan Wood, Laguna Beach, CA

Connie Loveland, Laguna Hills, CA

Phyllis Roberts, Laguna Hills, CA

Steven Allison, Laguna Niguel, CA

Suzanne Fliszar, Laguna Niguel, CA

Karyn Parvis, Laguna Niguel, CA

Lauren Linda, Laguna Woods, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Kevin O'Brien, Laguna Woods, CA

Sandra Van Horn, Laguna Woods, CA

David Reddy, Lake Arrowhead, CA

Richard Bejarano, Lake Elsinore, CA

Charles Decelles, Lake Elsinore, CA

Sean Brien, Lake Forest, CA

Bruce Cook, Lake Forest, CA

Bonnie Coomes, Lake Forest, CA

Shelley Logan, Lake Forest, CA

Darnell Montejano, Lake Forest, CA

Carman Broderick, Lakeport, CA

Patrick Bernardino, Lakeside, CA

Robert L Davenport, Lakewood, CA

Susan Brisby, Lancaster, CA

Patrishia Hodgman, Lancaster, CA

Eric Layton, Larkspur, CA

Rachael Richman, Larkspur, CA

Mona Bourell, Laytonville, CA

Sharon Paltin, Laytonville, CA

Ked Garden, Lemon Grove, CA

Jessica Fleischer, Lincoln, CA

Nicole Fountain, Lincoln, CA

Gail Marculescu, Lincoln, CA

Peggy Galusha, Live Oak, CA

Patricia MacLeod, Livermore, CA

Leo Mara, Livermore, CA

Sally Marone, Livermore, CA

Jerri Mcvicker, Livermore, CA

Stephen Stradling, Livermore, CA

Cindy Lashbrook, Livingston, CA

Elizabeth Eisenbeis, Lodi, CA

Audrey Lee, Lodi, CA

Patricia Maddock, Lodi, CA

Maribeth Ackerman, Lomita, CA

Mary Cook, Lomita, CA

Lise Fillion, Lomita, CA

Wendy Becker, Long Beach, CA

Frederick Cliver, Long Beach, CA

Thomas Crochet, Long Beach, CA

Kurt Cruger, Long Beach, CA

John Diaz, Long Beach, CA

Vanessa Dolan, Long Beach, CA

Mary Flint, Long Beach, CA

Debbie Flores, Long Beach, CA

Cheryl Follett, Long Beach, CA

Tamra Goris, Long Beach, CA

William Harte, Long Beach, CA

Genie Ideman, Long Beach, CA

Gail Karn, Long Beach, CA

Andrew Kort, Long Beach, CA

Gene Kumagai, Long Beach, CA

David Means, Long Beach, CA

Janmei Murdock, Long Beach, CA

Michsel Newey, Long Beach, CA

Greg Perkins, Long Beach, CA

Gail Powers, Long Beach, CA

Stanley Seeman, Long Beach, CA

Lance Smith, Long Beach, CA

Mark Sullivan, Long Beach, CA

Ryan Tilke, Long Beach, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Raymond Kraft, Loomis, CA

Sandy Friedman, Los Alamitos, CA

Tamara Madison, Los Alamitos, CA

Janice Apol, Los Altos, CA

Linda Brummer, Los Altos, CA

Gloria Dralla, Los Altos, CA

Linnea F, Los Altos, CA

Tracy Gibbons, Los Altos, CA

Kinshuk Govil, Los Altos, CA

Isabel Lee, Los Altos, CA

Jill Stone, Los Altos, CA

Leslie Abbott, Los Angeles, CA

Asad Abidi, Los Angeles, CA

Scott Acord, Los Angeles, CA

Marsha Alperin, Los Angeles, CA

Ernesto Alvarez, Los Angeles, CA

Richard Alvidrez, Los Angeles, CA

Stan Alvidrez, Los Angeles, CA

Raul Anorve, Los Angeles, CA

Raymond Aramburu, Los Angeles, CA

Thais Arata, Los Angeles, CA

Claudine Armand, Los Angeles, CA

Erika Armin, Los Angeles, CA

Lori Avalos, Los Angeles, CA

Soraya Barabi, Los Angeles, CA

Ann Bein, Los Angeles, CA

Linda Benjamin, Los Angeles, CA

Nancy Berman, Los Angeles, CA

Adam Bernstein, Los Angeles, CA

Mike Bievenouer, Los Angeles, CA

Vicki Bingo, Los Angeles, CA

Rollin Blanton, Los Angeles, CA

Paula Block-Levor, Los Angeles, CA

Jonathand Bogdanove, Los Angeles, CA

Daniel Boland, Los Angeles, CA

Deirdre Boland, Los Angeles, CA

David Bottrell, Los Angeles, CA

Julia Boyd, Los Angeles, CA

Mark Bramhall, Los Angeles, CA

Susan Brenner, Los Angeles, CA

Barbara Broide, Los Angeles, CA

Marcello Bue, Los Angeles, CA

Robert Burk, Los Angeles, CA

Thomas Cahill, Los Angeles, CA

Lisa Carloss, Los Angeles, CA

Melissa Casey, Los Angeles, CA

Victor Citrin, Los Angeles, CA

Jacob Combs, Los Angeles, CA

Steven Curtis, Los Angeles, CA

Sandra Del Castillo, Los Angeles, CA

Frank Devlin, Los Angeles, CA

Garry Diamond, Los Angeles, CA

Vicki Dipietro, Los Angeles, CA

Lance Dodes, Los Angeles, CA

Isabelle Du Soleil, Los Angeles, CA

Jan Ducker, Los Angeles, CA

Scott Dunfrund, Los Angeles, CA

Connie Eakes, Los Angeles, CA

Chris Eaton, Los Angeles, CA

Frederick Echeverria, Los Angeles, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Joe Eckre, Los Angeles, CA
Susan Estrella, Los Angeles, CA
Dominick Falzone, Los Angeles, CA
Alexander Fierro-Clarke, Los Angeles, CA
Sean Foley, Los Angeles, CA
Robert Frcck, Los Angeles, CA
Cynthia Freeman, Los Angeles, CA
Elly Fry, Los Angeles, CA
Kristina Fukuda, Los Angeles, CA
Leslie Fung, Los Angeles, CA
Kay Gallin, Los Angeles, CA
Eugene Garvin, Los Angeles, CA
Terri Gedo, Los Angeles, CA
Chelsea Gilmore, Los Angeles, CA
Mary Glazer, Los Angeles, CA
Prisca Gloor, Los Angeles, CA
Jan Goldstein, Los Angeles, CA
Beth Goode, Los Angeles, CA
Luna Gooding, Los Angeles, CA
Carol Gordon, Los Angeles, CA
Andrea Grano, Los Angeles, CA
Cheryl Guerbaoui, Los Angeles, CA
Megan Hanson, Los Angeles, CA
Matthew Harrington, Los Angeles, CA
William Hartung, Los Angeles, CA
Mary Herbener, Los Angeles, CA
Julie Hermelin, Los Angeles, CA
Jim Hillin, Los Angeles, CA
Deborah Holcomb, Los Angeles, CA
Carla Holguin, Los Angeles, CA

Steffeny Holtz, Los Angeles, CA
Merri Huang, Los Angeles, CA
Cynthia Hudley, Los Angeles, CA
Melissa Hunt, Los Angeles, CA
Faisal Hussain, Los Angeles, CA
Shigeyo Hyman, Los Angeles, CA
Lara Ingraham, Los Angeles, CA
Matthew Jablin, Los Angeles, CA
Michelle Jackino, Los Angeles, CA
Angie Johnson, Los Angeles, CA
James Johnson, Los Angeles, CA
Marlene Josephs, Los Angeles, CA
Michelle Kawata, Los Angeles, CA
Kaija Keel, Los Angeles, CA
Aeolan Kelly, Los Angeles, CA
Jon Kinnally, Los Angeles, CA
Julie Klabin, Los Angeles, CA
Rebecca Klarin, Los Angeles, CA
Ann Kowaleski, Los Angeles, CA
Kevin Kraus, Los Angeles, CA
Francine Kubrin, Los Angeles, CA
Anita Kuhn, Los Angeles, CA
lyn kupferman, Los Angeles, CA
Jean Lace, Los Angeles, CA
Diane Lamont, Los Angeles, CA
Edward Landler, Los Angeles, CA
Jacob Lang, Los Angeles, CA
Patrice Laponce, Los Angeles, CA
Seth Laursen, Los Angeles, CA
Terrie Lavery, Los Angeles, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Linda Leckart, Los Angeles, CA

Daniel Ledesam, Los Angeles, CA

Deborah Levine, Los Angeles, CA

Janice Levine, Los Angeles, CA

Paula Levy, Los Angeles, CA

Tracey Levy, Los Angeles, CA

Marie Lewis, Los Angeles, CA

Helena Lipstadt, Los Angeles, CA

Robin Long, Los Angeles, CA

Alexandria Luostari, Los Angeles, CA

Anthony M Ramey, Los Angeles, CA

Arnold Magid, Los Angeles, CA

James Mahan, Los Angeles, CA

Jennifer Mandel, Los Angeles, CA

Ann Marable, Los Angeles, CA

Tina Markowe, Los Angeles, CA

Linda Martinez, Los Angeles, CA

Casee Maxfield, Los Angeles, CA

Blythe Mayne, Los Angeles, CA

Patrica Mcanally, Los Angeles, CA

Karen McCaw, Los Angeles, CA

Shereen McDade, Los Angeles, CA

Scott Mckinsey, Los Angeles, CA

Gail McMullen, Los Angeles, CA

Robert Meier, Los Angeles, CA

Myron Meisel, Los Angeles, CA

Barbara Mesney, Los Angeles, CA

Jeremy Miller, Los Angeles, CA

John Miller, Los Angeles, CA

Edie Mirman, Los Angeles, CA

Maria Molund, Los Angeles, CA

Curtis Mortenson, Los Angeles, CA

Meg Murphy, Los Angeles, CA

Joan Murray, Los Angeles, CA

Anna Narysheva, Los Angeles, CA

Anthony Navarrete, Los Angeles, CA

Winifred Neisser, Los Angeles, CA

Carol Ng, Los Angeles, CA

James Nicholas, Los Angeles, CA

Nan Norris, Los Angeles, CA

Krister Olsson, Los Angeles, CA

Frank Ortiz, Los Angeles, CA

Michelle Pazer, Los Angeles, CA

David Pelka, Los Angeles, CA

John Perry, Los Angeles, CA

Michael Price, Los Angeles, CA

Louis Priven, Los Angeles, CA

Mark Rachki, Los Angeles, CA

Luvh Rakhe, Los Angeles, CA

Nina Richmond, Los Angeles, CA

Jeff Richter, Los Angeles, CA

Merete Rietveld, Los Angeles, CA

Candace Rocha, Los Angeles, CA

Martha Ronk, Los Angeles, CA

Valerie Rose, Los Angeles, CA

Brandon Ruiz, Los Angeles, CA

Dalia Salgado, Los Angeles, CA

Nina Savill, Los Angeles, CA

Darby Saxbe, Los Angeles, CA

Jeffrey Sayers, Los Angeles, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Alisha Seaton, Los Angeles, CA

Lisa Sergy, Los Angeles, CA

Eric Shabsis, Los Angeles, CA

Mariam Shah-Rais, Los Angeles, CA

Theodore Shapiro, Los Angeles, CA

Susan Shaughnessy, Los Angeles, CA

A.F. Shayne, Los Angeles, CA

Rick Siegel, Los Angeles, CA

Marc Silverman, Los Angeles, CA

Elizabeth Singleton, Los Angeles, CA

Jerry Sisneros, Los Angeles, CA

Erica Smith, Los Angeles, CA

Valeece Smith, Los Angeles, CA

Stanley Stahl, Los Angeles, CA

Paul Steel, Los Angeles, CA

Neal Steiner, Los Angeles, CA

Julie Tan, Los Angeles, CA

Francine Tansey, Los Angeles, CA

Donna Tate, Los Angeles, CA

Cathy Thornburn, Los Angeles, CA

Aja Thrasher, Los Angeles, CA

Glenna Traiger, Los Angeles, CA

Ivy Tran, Los Angeles, CA

Dennis Tufano, Los Angeles, CA

Graham Turner, Los Angeles, CA

Tara Turner, Los Angeles, CA

Mary Urrutia, Los Angeles, CA

Nicholas Vanbrunt, Los Angeles, CA

Alvaro Vega, Los Angeles, CA

Alexandra Ward, Los Angeles, CA

Mack Watson, Los Angeles, CA

Mary Weeks, Los Angeles, CA

Lindsey Weinstein, Los Angeles, CA

Michael White, Los Angeles, CA

Peter White, Los Angeles, CA

Deborah Willis, Los Angeles, CA

Maggie Wineburgh-Freed, Los Angeles, CA

Sidney Winston, Los Angeles, CA

Michael Wolfson, Los Angeles, CA

Lacey Wozny, Los Angeles, CA

Kelly Wright, Los Angeles, CA

Jenny Yamazaki, Los Angeles, CA

Mary Young, Los Angeles, CA

Noah Youngelson, Los Angeles, CA

Allen Zipper, Los Angeles, CA

ALVEN ANDERSEN, Los Banos, CA

Esther Ciprian, Los Banos, CA

Thomas Ferrito, Los Gatos, CA

Marilyn Fuller, Los Gatos, CA

Lisa Gherardi, Los Gatos, CA

Karole Ishida, Los Gatos, CA

Tim Kain, Los Gatos, CA

Brenda Laurel, Los Gatos, CA

Arlene Lightford, Los Gatos, CA

Whitney Parker, Los Gatos, CA

Mark Parrinello, Los Gatos, CA

Peter Bresler, Los Osos, CA

Jacqueline Froehlich-Lheureaux, Los Osos, CA

Lesley McCance, Los Osos, CA

Pamela Morrison, Los Osos, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Judy Madigan, Loyalton, CA
Samuel Clark, Magalia, CA
Lucia Castaneda, Malibu, CA
Deborah Collodel, Malibu, CA
Marilyn Green, Malibu, CA
Cliff Selbert, Malibu, CA
Rob Seltzer, Malibu, CA
D.G. Sifuentes, Mammoth Lakes, CA
John Clifford, Manhattan Beach, CA
Joe Flanagan, Manhattan Beach, CA
Joanne Hadley, Manhattan Beach, CA
Marisa Landsberg, Manhattan Beach, CA
John Miller, Manhattan Beach, CA
Orlando Aguilar, Manteca, CA
Rene Cabrera, Manteca, CA
Kathi Fotinos, Manteca, CA
Linda Gordin, Manteca, CA
Pia Baker, Marina, CA
Henry Bergstresser, Marina, CA
Colette Erreca-Norris, Marina, CA
Trudy Goodman, Marina Del Rey, CA
Leean Lantos, Marina Del Rey, CA
Steven Mandel, Marina Del Rey, CA
Margaret Morris, Marina Del Rey, CA
Cathy Nadell, Marina Del Rey, CA
Robert Pool, Marina Del Rey, CA
Donald Newman, Mariposa, CA
Dianna Mitzner, Markleeville, CA
Leonard Miller, Martinez, CA
Margaret Netherby, Martinez, CA

Kris Skow, Martinez, CA
Robin Hamlin, McKinleyville, CA
Jimmie Oneal, Meadow Valley, CA
Kimberly Berryman, Meadow Vista, CA
Raven Deerwater, Mendocino, CA
Rob Gallinger, Menifee, CA
Keith Williams, Menifee, CA
William Brown, Menlo Park, CA
Nancy Federspiel, Menlo Park, CA
Erin Gillett, Menlo Park, CA
Sam Karp, Menlo Park, CA
Hunter Lyng, Menlo Park, CA
Christina McClure, Menlo Park, CA
Janet Poses, Menlo Park, CA
Mark Reed, Menlo Park, CA
Vickie Rozell, Menlo Park, CA
Suzan Syrett, Menlo Park, CA
Kyle Vogel, Menlo Park, CA
Odessa Osby, Merced, CA
Connie Wright, Merced, CA
J Trudnich, Midway City, CA
Larry Bathgate, Mill Valley, CA
Joslyn Baxter, Mill Valley, CA
Carl Bidleman, Mill Valley, CA
Maria Brown, Mill Valley, CA
Catherine Chute, Mill Valley, CA
David Donenfeld, Mill Valley, CA
Diane Goldman, Mill Valley, CA
Jane Hall, Mill Valley, CA
Arlene Heitner, Mill Valley, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Nancy Kehoe, Mill Valley, CA
Ann Lawrence, Mill Valley, CA
Natalie Lenn, Mill Valley, CA
Sarah Maddix, Mill Valley, CA
Antonina Markoff, Mill Valley, CA
Catherine Moreno, Mill Valley, CA
Roberta Newman, Mill Valley, CA
Simon Perkoff, Mill Valley, CA
Marilyn Price, Mill Valley, CA
Sherry Reson, Mill Valley, CA
Daniel Stewart, Mill Valley, CA
Frank Valone, Mill Valley, CA
Gary Vanacker, Mill Valley, CA
Dianna Taylor, Millbrae, CA
Brenda Rodriguez, Mission Hills, CA
Timothy Haney, Mission Viejo, CA
Lorrie Rudolph, Mission Viejo, CA
Lollie Christner, Modesto, CA
Amber Eby, Modesto, CA
Karen Lynas, Modesto, CA
Derek Scholten, Modesto, CA
Dennis And Andrea Hopkins, Monrovia, CA
Donna Alleyne-Chin, Montara, CA
Sandra McColley, Montclair, CA
Ruth Alota, Monterey, CA
Deb Federin, Monterey, CA
Steven Hall, Monterey, CA
Lauren Leonarduzzi, Monterey, CA
Donna Owens, Monterey, CA
Niccole Tiffany, Monterey, CA

Stephen Vicuna, Monterey Park, CA
Karen Drake, Montrose, CA
Cheri Bly, Moorpark, CA
Patricia Connors, Moorpark, CA
Christine Holmes, Moorpark, CA
Kathryn Choudhury, Moraga, CA
Ashley Coates, Moraga, CA
Greg Tomlin, Moraga, CA
Mary West, Moraga, CA
David DANIEL, Moreno Valley, CA
Sandra Wilcox, Moreno Valley, CA
Cynthia Burnham, Morgan Hill, CA
Paula Diederich, Morgan Hill, CA
Kathy Farrell, Morgan Hill, CA
Janet Hagemann, Morgan Hill, CA
Martin Smallen, Morgan Hill, CA
Nancy Carter, Morro Bay, CA
Genevieve Holloway, Morro Bay, CA
Larry Truesdale, Morro Bay, CA
Cheryl Parker, Moss Beach, CA
Denise Phillips, Moss Beach, CA
Michelle Santy, Moss Beach, CA
Jim Curland, Moss Landing, CA
Jennifer Roach, Mount Shasta, CA
Alice Rogers, Mount Shasta, CA
Paul Blumenstein, Mountain View, CA
Judith Butts, Mountain View, CA
Kermit Cuff, Mountain View, CA
Bruce England, Mountain View, CA
Marie Evitt, Mountain View, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Linda Freccia, Mountain View, CA

Diana Hall, Mountain View, CA

Amy Laden, Mountain View, CA

Rachel Loui, Mountain View, CA

Ben Martin, Mountain View, CA

Katherine Rivera, Mountain View, CA

Dinmani Savla, Mountain View, CA

Robert Valenti, Mountain View, CA

Julie Watt, Mountain View, CA

D Cameron Sellar, Murphys, CA

Susan Horne, Murrieta, CA

Anisa Johnson, Murrieta, CA

Kay Lieber, Murrieta, CA

Ana Rial, Murrieta, CA

Anna Starbuck-White, Murrieta, CA

Martha Treckman, Murrieta, CA

Janet Wheeler, Murrieta, CA

Jerrold Baker, Napa, CA

Kathy Bliss, Napa, CA

Jeff Conklin, Napa, CA

Kathy Cramer, Napa, CA

Ellen Gachesa, Napa, CA

Joe Gonzales, Napa, CA

Charesa Harper, Napa, CA

Donna Holt, Napa, CA

Timothy Milos, Napa, CA

Linda Newberry, Napa, CA

Julie Owen, Napa, CA

John Reichel, Napa, CA

Susan Sandler, Napa, CA

Evelyn Trevethan, Napa, CA

Jacob Wolbert, Napa, CA

Moana Moeller, National City, CA

Micki Besancon, Nevada City, CA

Michael Garitty, Nevada City, CA

Scott Howard, Nevada City, CA

Lester Milroy, Nevada City, CA

Glenn Smith, Nevada City, CA

Christine Fisher, Newark, CA

Lyla Diaz, Newbury Park, CA

Chantal Ferguson, Newbury Park, CA

Audrey Greene, Newbury Park, CA

Doug Kingery, Newbury Park, CA

Sylvia Lewis Gunning, Newbury Park, CA

Cindy Stein, Newbury Park, CA

Steve Iverson, Newport Beach, CA

Joyce Meyers, Newport Beach, CA

Vic Paglia, Newport Beach, CA

Dan Rossen, Newport Beach, CA

Shala Shamardi, Newport Beach, CA

Robin Williams, Nicasio, CA

Stephanie Aston, North Hills, CA

Christopher Geukens, North Hills, CA

Natalie Aharonian, North Hollywood, CA

Andrea Dundas, North Hollywood, CA

Steven Meissner, North Hollywood, CA

Fjaere Mooney, North Hollywood, CA

Llyn Parker, North Hollywood, CA

Dennis Brue, Northridge, CA

Randy Harken, Northridge, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Susan Parker, Northridge, CA

Janis CARROLL, Novato, CA

Mike Cass, Novato, CA

Orrin Cook, Novato, CA

Adrian Fried, Novato, CA

michael griffin, Novato, CA

William Hoffman, Novato, CA

Marisa Hoke, Novato, CA

Daniel Kemp, Novato, CA

Mary Mixter, Novato, CA

Nancy Parker, Novato, CA

Marianna Riser, Novato, CA

Maija Schaefer, Novato, CA

Allan Young, Novato, CA

Carl Bage, Oak Park, CA

Paul Kleinbaum, Oak Park, CA

Enid Miller, Oak Park, CA

helen conly, Oak View, CA

Lindsey Goosherst, Oakdale, CA

Bonnie Thompson, Oakdale, CA

Scott Amundson, Oakland, CA

Patrice Anderson, Oakland, CA

cindy beckley, Oakland, CA

Thomas Borders, Oakland, CA

Linda Brandon, Oakland, CA

Ruth Brousseau, Oakland, CA

Sarah Cathey, Oakland, CA

Shelley Charney, Oakland, CA

Elizabeth Christian, Oakland, CA

Daniel Clanon, Oakland, CA

Barbara Clark, Oakland, CA

Karen Clayton, Oakland, CA

Anne Corcos, Oakland, CA

Devin Coyle, Oakland, CA

Joseph Dashiell, Oakland, CA

Kai Drekmeier, Oakland, CA

Anya Dubin, Oakland, CA

Judith Ennis, Oakland, CA

Nancy Erb, Oakland, CA

Jean Farooki, Oakland, CA

Jemima Farwell, Oakland, CA

Susan Flakus, Oakland, CA

Marcia Flannery, Oakland, CA

Jon Floyd, Oakland, CA

Denise Forant, Oakland, CA

Dr A G, Oakland, CA

Kenneth Gibson, Oakland, CA

John Golding, Oakland, CA

Joan Gombos, Oakland, CA

Doug Gwosdz, Oakland, CA

Henry Harmon, Oakland, CA

Ann Harvey, Oakland, CA

Carol Haskell, Oakland, CA

Karl Heins, Oakland, CA

Nancy Huneke, Oakland, CA

Amy Johnson, Oakland, CA

Christine Kalb, Oakland, CA

Laakea Laano, Oakland, CA

Mark Lecker, Oakland, CA

Cheryl Levin, Oakland, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Joseph Maffei, Oakland, CA

Diana Malloy, Oakland, CA

Caephren McKenna, Oakland, CA

Susan Mclean, Oakland, CA

Merrilee Mitchell, Oakland, CA

Sandra Morey, Oakland, CA

Jann Noddin, Oakland, CA

Alicea Osborne, Oakland, CA

Julie Ouellette, Oakland, CA

Nancy Paskowitz, Oakland, CA

Ikaren Payne, Oakland, CA

Catherine Pennington, Oakland, CA

Micaela Pronio, Oakland, CA

Barbara Richmon, Oakland, CA

Karen Riley, Oakland, CA

Carly Ritter, Oakland, CA

Nancy Rowell, Oakland, CA

Gina Sanfilippo, Oakland, CA

Rondi Saslow, Oakland, CA

William Saul, Oakland, CA

Lesley Schultz, Oakland, CA

Judith Smith, Oakland, CA

Leslie Smith, Oakland, CA

Leslie Smith, Oakland, CA

Deborah Song, Oakland, CA

Emily Sparks, Oakland, CA

Gaylen Stirton, Oakland, CA

Laura Tan, Oakland, CA

Leslie Tenney, Oakland, CA

Dena Thaler, Oakland, CA

Nadya Tichman, Oakland, CA

Ruth Tretbar, Oakland, CA

Marge Turngren, Oakland, CA

Virginia Vida, Oakland, CA

Pablo Voitzuk, Oakland, CA

Mary Watkins, Oakland, CA

Sally Weare, Oakland, CA

Jessica Weida, Oakland, CA

Gail Weininger, Oakland, CA

Marie Whidden, Oakland, CA

Patrice Woeppel, Oakland, CA

Aaron Young, Oakland, CA

Margaret Zhou, Oakland, CA

Donald Betts, Oceanside, CA

Alessandra Colfi, Oceanside, CA

Sarah Crooks, Oceanside, CA

Linda Evans, Oceanside, CA

Andrea Ferrari, Oceanside, CA

Holly Gilzow, Oceanside, CA

Charmaine Hicks, Oceanside, CA

Ronnie Huber, Oceanside, CA

Beverly Kanawi, Oceanside, CA

Ronald Mirolla, Oceanside, CA

Barry Ortega, Oceanside, CA

Ivy Pratt, Oceanside, CA

Michael Price, Oceanside, CA

Donna Taylor, Oceanside, CA

Sharon Engel, Ojai, CA

Stephan Foley, Ojai, CA

Joseph Gilbert, Ojai, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Cindy Kosinski, Ojai, CA

Brooke Obrien, Ojai, CA

Rebecca Windinwood, Ojai, CA

Valerie Shideler, Olivehurst, CA

Zahra Mansouri, Olympic Valley, CA

Kelly Ayers, Ontario, CA

Kathy Simington, Ontario, CA

Richard Wiles, Ontario, CA

Danett Abbott-Wicker, Orange, CA

Florice Hoffman, Orange, CA

Ellen Jordan, Orange, CA

Tammy Vigiletti, Orange, CA

Nancy Polito, Orangevale, CA

Lynne Thomson, Orangevale, CA

Diane Bianchi, Orinda, CA

Alan Goldhammer, Orinda, CA

Lucy Henderson, Orinda, CA

Nancy Henderson, Orinda, CA

Lynn Kalmar, Orinda, CA

Lindy Novak, Orinda, CA

Eileen Taglang, Orinda, CA

Phil Chandler, Oxnard, CA

Kim Haley, Oxnard, CA

Ivan Mendez, Oxnard, CA

Lauren Mendez, Oxnard, CA

Maree Penhart, Oxnard, CA

Jeannie Pollak, Oxnard, CA

Susan Porteus, Oxnard, CA

Nancy Bainter, Pacific Grove, CA

Margaret Goodman, Pacific Grove, CA

Melissa Hutchinson, Pacific Grove, CA

Celia Stauty Luis, Pacific Grove, CA

Paul Burkhart, Pacific Palisades, CA

Josephine Chen, Pacific Palisades, CA

Tatsinda Doddscohen, Pacific Palisades, CA

Melanie Green, Pacific Palisades, CA

Waldemar Kalinowski, Pacific Palisades, CA

Vienna Nowell, Pacific Palisades, CA

Gerald Offsay, Pacific Palisades, CA

Timothy Phan, Pacific Palisades, CA

Pat Polinger, Pacific Palisades, CA

Jeanette Ryan, Pacific Palisades, CA

Cathleen Sands, Pacific Palisades, CA

Teresa Lang, Pacific Plsds, CA

Grace Garza, Pacifica, CA

Paul Spakowski, Pacifica, CA

Jeremy Aldridge, Pacoima, CA

Dita Å. Å kaliÅ,, Å• , Palm Desert, CA

Bonnie Bauman, Palm Desert, CA

Katy Kane, Palm Desert, CA

Joseph Anatra, Palm Springs, CA

Elizabeth Ingersoll, Palm Springs, CA

Bill Munce, Palm Springs, CA

Michelle Palladine, Palm Springs, CA

Kathleen Taggart, Palm Springs, CA

Therese Ryan, Palmdale, CA

Albert Bivas, Palo Alto, CA

Jordan Briskin, Palo Alto, CA

Ana Chou, Palo Alto, CA

Sue Dinwiddie, Palo Alto, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Madeline Dirado, Palo Alto, CA

Faith Gibson, Palo Alto, CA

Christine James, Palo Alto, CA

Zahra Kassam, Palo Alto, CA

Nancy Kramer, Palo Alto, CA

Divanny Lamas, Palo Alto, CA

Evan Lurie, Palo Alto, CA

Peter Moffat, Palo Alto, CA

Thomas Patterson, Palo Alto, CA

David Perry, Palo Alto, CA

Jack Pines, Palo Alto, CA

Margaret Rosenbloom, Palo Alto, CA

Cindy Siu, Palo Alto, CA

Robin Benezra, Palos Verdes Peninsula, CA

Jan Gardner, Palos Verdes Peninsula, CA

Katherine Greenberg, Palos Verdes Peninsula,
CA

Craig Dawson, Paradise, CA

Joan Aebi, Pasadena, CA

Catherine Beauchamp, Pasadena, CA

Sandra Bendon, Pasadena, CA

Maria Sol Caro Martini, Pasadena, CA

Linc Conard, Pasadena, CA

April Danz, Pasadena, CA

George Elder, Pasadena, CA

Laura Fleming, Pasadena, CA

Robert Gibbs, Pasadena, CA

Gary Green, Pasadena, CA

Francisco Ochoa, Pasadena, CA

Leisa Onzo, Pasadena, CA

Matthew Owen, Pasadena, CA

Jeremy Polgar, Pasadena, CA

Charles Roth, Pasadena, CA

Joseph Salinas, Pasadena, CA

Erica Spier, Pasadena, CA

Grayson Torgersen, Pasadena, CA

Susan Walp, Pasadena, CA

Eric Beaulieu, Paso Robles, CA

Gaye Torjusen, Penn Valley, CA

Tyrone Johnson, Perris, CA

Rebecca Smith, Perris, CA

Jeanne Martin, Pescadero, CA

Elizabeth Ambrosi, Petaluma, CA

Scott Andrews, Petaluma, CA

Tom Bornheimer, Petaluma, CA

Mary Fazekas, Petaluma, CA

Patti Fink, Petaluma, CA

Phoenix Giffen, Petaluma, CA

David Keller, Petaluma, CA

Rachel Lucine, Petaluma, CA

Annette Raible, Petaluma, CA

Wrenn Rittenhouse, Petaluma, CA

M. Steere, Petaluma, CA

Jane Vosburg, Petaluma, CA

Barry Weinzev, Petaluma, CA

Justine Zang, Petaluma, CA

Debra Valenzuela, Pico Rivera, CA

James Chanin, Piedmont, CA

John Hardgrove, Piedmont, CA

Janice Foss, Pinole, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Joan Nygaard, Pinole, CA
Pamela Suess, Pinole, CA
Marjorie Kearns, Pinon Hills, CA
janet hergamo, Piru, CA
Bob Leppo, Pismo Beach, CA
Lisa Hardesty, Pittsburg, CA
William Ninde, Pittsburg, CA
Candy Bowman, Placerville, CA
David Hess, Placerville, CA
Mike Rolbeck, Placerville, CA
Rob Doucette, Playa del Rey, CA
Gerda Gober, Playa Vista, CA
Lisa Nelson Colton, Playa Vista, CA
Karen Castle, Pleasant Hill, CA
Nathalie Musson, Pleasant Hill, CA
Shari Riffe, Pleasant Hill, CA
Marie Silva, Pleasant Hill, CA
John Yavorsky, Pleasant Hill, CA
Linda Wong, Pleasanton, CA
Ken Lake, Pollock Pines, CA
Linda Watson, Pomona, CA
Roxann Schaubhut, Pope Valley, CA
Daniel Vargas, Port Hueneme, CA
Frances Goodsite, Porter Ranch, CA
Curtis Miller, Porter Ranch, CA
Kristi Somers-Kawas, Porter Ranch, CA
Wanda Salaiz, Porterville, CA
Malcolm Moore, Portola, CA
Tracy Sherman, Portola Valley, CA
Birgitte Moyer, Portola Vally, CA

Mary Callan, Poway, CA
Laura Flynn, Poway, CA
Beverly Greene, Poway, CA
Linda Rhine, Quail Valley, CA
Faith Strailey, Quincy, CA
Tammy Bullock, Ramona, CA
Jeanette Worland, Ramona, CA
Dale Wright, Ramona, CA
Karyn Wagman, Rancho Cordova, CA
Antoinette Anderson, Rancho Cucamonga, CA
Miriam Baum, Rancho Cucamonga, CA
Frederick Hamilton, Rancho Cucamonga, CA
Michael Herbert, Rancho Cucamonga, CA
Dianna McNair, Rancho Cucamonga, CA
Vickie Reedy, Rancho Cucamonga, CA
Laura Saint Martin, Rancho Cucamonga, CA
Katina Vlastos, Rancho Cucamonga, CA
Pete Childs, Rancho Mirage, CA
Richard Gonzales, Rancho Mirage, CA
John Varga, Rancho Mirage, CA
Judy Bradford, Rancho Palos Verdes, CA
Mary Schneider, Rancho Palos Verdes, CA
Linda Webb, Rancho Palos Verdes, CA
Kathy Dougherty, Rancho Santa Fe, CA
Craig Fenech, Rancho Santa Fe, CA
Allyson Finkel, Rancho Santa Margarita, CA
Dionne Hofmeister, Rch Cucamonga, CA
Yvonne Olivares, Rch Cucamonga, CA
Susan Thompson, Rcho Sta Marg, CA
Susan Emerson, Redding, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Joyce Harris, Redding, CA

James Hastings, Redding, CA

Ann Lougee, Redding, CA

Neal Malmsten, Redding, CA

Andrea Dixon, Redlands, CA

Sean Hagstrom, Redlands, CA

Jayne Miller, Redlands, CA

Rhonda Stanton, Redlands, CA

Tracy Wise, Redlands, CA

Doug Bender, Redondo Beach, CA

Jade Hall, Redondo Beach, CA

Kathleen Jacecko, Redondo Beach, CA

Craig Masuoka, Redondo Beach, CA

Alie Rowen, Redondo Beach, CA

Don Schlossman, Redondo Beach, CA

Dayla Sims, Redondo Beach, CA

Kate Ashley, Redwood City, CA

Juliann Berman, Redwood City, CA

Kerry Boyd, Redwood City, CA

Daryl Carr, Redwood City, CA

Tiki Dare, Redwood City, CA

Lisa Gruman, Redwood City, CA

Jeffrey Hayden, Redwood City, CA

Thalia Lubin, Redwood City, CA

Elyce Melmon, Redwood City, CA

Bruce Storms, Redwood City, CA

John West, Redwood City, CA

Jeff Box, Redwood Valley, CA

Alisha Bettinsoli, Reedley, CA

Jl Angell, Rescue, CA

Rosa Baeza, Reseda, CA

Eugenia Buerklin, Reseda, CA

Christine Douglass, Reseda, CA

Sheila Fox, Reseda, CA

Katharine Greenebaum, Reseda, CA

Carlos Nunez, Reseda, CA

Bret Polish, Reseda, CA

Sandra Angell, Richmond, CA

Nancy Donald, Richmond, CA

Johanna Ferman, Richmond, CA

Robert Knorr, Richmond, CA

Kevin McKay, Richmond, CA

BILL PINKHAM, Richmond, CA

B Sandow, Richmond, CA

Michael Sholinbeck, Richmond, CA

Robert Thomas, Richmond, CA

Carol Dezellem, Ridgecrest, CA

Penelope LePome, Ridgecrest, CA

Pat Marshall, Rio Linda, CA

Bonnie Arbuckle, Riverbank, CA

Mike Acosta, Riverside, CA

Sherri Baker, Riverside, CA

Kay Downer, Riverside, CA

Ed Garcia, Riverside, CA

Michael Harrop, Riverside, CA

Susan Hemsley, Riverside, CA

Julie Holdridge-Prado, Riverside, CA

Patricia Knox, Riverside, CA

Catherine Mason, Riverside, CA

Pamela McDonald, Riverside, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Henry Rosenfeld, Riverside, CA
Pam Schmitt, Riverside, CA
James Toland, Riverside, CA
Nisa Wallace, Riverside, CA
Bernard Waltzer, Riverside, CA
Reta Davis, Rocklin, CA
Daniel McKeighen, Rocklin, CA
Elaine Wander Leclair, Rodeo, CA
Alan Bosch, Rohnert Park, CA
Denise Brown, Rohnert Park, CA
Sandra Lee, Rohnert Park, CA
Susan Ott, Rohnert Park, CA
Lawrence Joe, Rosemead, CA
Abigail Davis, Roseville, CA
Natalie Grand, Roseville, CA
Glenda Hay, Roseville, CA
Jamie Smith, Roseville, CA
Ann Wasgatt, Roseville, CA
Stephanie Legras, Ross, CA
Helen Hooper, Rumsey, CA
Shalomar Loving, Running Springs, CA
Henryk Flashner, S Pasadena, CA
Anders Olsson, S Pasadena, CA
Seth Ackerman, Sacramento, CA
James Adams, Sacramento, CA
Todd Bloom, Sacramento, CA
Robert Boughton, Sacramento, CA
Maureen Burness, Sacramento, CA
Faylene Carter, Sacramento, CA
Sandy Commons, Sacramento, CA

Deborah Cosentino, Sacramento, CA
Jim Deneff, Sacramento, CA
Patty Dismukes, Sacramento, CA
Mary Duplat, Sacramento, CA
Georgia Econome, Sacramento, CA
Cindy Ferguson, Sacramento, CA
Natsuki Fukasawa, Sacramento, CA
Jody Gordon, Sacramento, CA
Alan Graham, Sacramento, CA
Cynthia Gunston-Parks, Sacramento, CA
Margaret Haines, Sacramento, CA
Greg Hayes, Sacramento, CA
Karen Jacques, Sacramento, CA
Dwayne Johnson, Sacramento, CA
Barbara Lucas, Sacramento, CA
Carol Luery, Sacramento, CA
Marshal McKitrick, Sacramento, CA
Esther Mooncrest, Sacramento, CA
Kiara Mowry, Sacramento, CA
Sharon Nicodemus, Sacramento, CA
Holly Nightingale, Sacramento, CA
Jana Perinchief, Sacramento, CA
Donald Porath, Sacramento, CA
Stuart Reeves, Sacramento, CA
Mark Reichel, Sacramento, CA
Twyla Rowe, Sacramento, CA
Darlene Ruiz, Sacramento, CA
Renee Sankus, Sacramento, CA
Joseph Sebastian, Sacramento, CA
Fay Slaterp9, Sacramento, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Gayle Smith, Sacramento, CA
Sylvia Star, Sacramento, CA
Joan Stults, Sacramento, CA
Theresa Taylor, Sacramento, CA
Deborah Thomson, Sacramento, CA
Erh-Yen To, Sacramento, CA
Ian Turner, Sacramento, CA
Jillian Unger, Sacramento, CA
Cara Vallot, Sacramento, CA
Betty Wright, Sacramento, CA
Sandra Young, Sacramento, CA
Elizabeth Novak Milliken, Saint Helena, CA
Richard Allen, Salinas, CA
Dale Hillard, Salinas, CA
David Prina, Salinas, CA
Catherine Uchiyama, Salinas, CA
Roseann Dal Bello, San Anselmo, CA
Sherry Freeman, San Anselmo, CA
Zoe Harris, San Anselmo, CA
Catherine Loudis, San Anselmo, CA
Sheila Mcclear, San Anselmo, CA
Julia Riboli, San Anselmo, CA
Genevieve Richardson, San Anselmo, CA
Paula Spencer, San Anselmo, CA
Bret Walburg, San Anselmo, CA
April Wolcott, San Anselmo, CA
Kristin Womack, San Anselmo, CA
Deborah Bayne, San Bernardino, CA
Eileen Bordy, San Bruno, CA
Daniel Carrillo, San Bruno, CA

Elisse De Sio, San Carlos, CA
George Ruiz, San Carlos, CA
Anne Tartaglia, San Carlos, CA
Lori Avakian, San Clemente, CA
Kevin Bissonnette, San Clemente, CA
Dennis Bright, San Clemente, CA
Maryann LaNew, San Clemente, CA
Marcela Vizcaya, San Clemente, CA
Terri Wiley, San Clemente, CA
Natalie Addleson, San Diego, CA
Kimberly Alexander, San Diego, CA
John Anderson, San Diego, CA
Ian Bates, San Diego, CA
Melissa Behar, San Diego, CA
Victoria Bennett, San Diego, CA
Sarah Black, San Diego, CA
Joanne Britton, San Diego, CA
Bonnie Burke, San Diego, CA
Shereeliz Caldwell, San Diego, CA
Suzan Candas, San Diego, CA
Christopher Chatard, San Diego, CA
Cecelia Conover, San Diego, CA
Geoffrey Cook, San Diego, CA
Andrew Corn, San Diego, CA
Suzanne Daneshvari, San Diego, CA
Sandra Dawes, San Diego, CA
Britton Donaldson, San Diego, CA
Sami Doski, San Diego, CA
robert downey, San Diego, CA
Rich Elam, San Diego, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Larry Emerson, San Diego, CA
James Ferguson, San Diego, CA
Terrance Gardner, San Diego, CA
Henry Goff, San Diego, CA
Dale Haas, San Diego, CA
Barbara Hall, San Diego, CA
Robin Halliday, San Diego, CA
Brooke Harding, San Diego, CA
Fiona Hardy, San Diego, CA
Anne Harrington, San Diego, CA
Joanie Hartman, San Diego, CA
Steve Hartnett, San Diego, CA
Robert Haselbeck, San Diego, CA
David Haskins, San Diego, CA
Joanne Hayakawa, San Diego, CA
Dee Hayes, San Diego, CA
Diana Henderson, San Diego, CA
miguel and yolanda higuera, San Diego, CA
Jane Illades, San Diego, CA
Stephanie Jennings, San Diego, CA
Michael A. Johnston, San Diego, CA
Rebecca Kloker, San Diego, CA
Julie Kolb, San Diego, CA
Rochelle La Frinere, San Diego, CA
John Landmann, San Diego, CA
Dianne Lane, San Diego, CA
Kira Lebowitz, San Diego, CA
Diana Lee, San Diego, CA
Furman Lee, San Diego, CA
Don Leichtling, San Diego, CA

Lacey Levitt, San Diego, CA
Mary Jo Lindstrom, San Diego, CA
Dawna Mackedanz, San Diego, CA
Paula Maglione, San Diego, CA
Alicia Mangum, San Diego, CA
Martin Marcus, San Diego, CA
Krista Marx, San Diego, CA
Carol Masterson, San Diego, CA
Jacqueline McVicar, San Diego, CA
Diana Meisenholder, San Diego, CA
Mika Menasco, San Diego, CA
Stephen Mitton, San Diego, CA
David Montesi, San Diego, CA
Pam Montroy, San Diego, CA
Susan Oliver, San Diego, CA
Beverly Rehm, San Diego, CA
Robin Reinhart, San Diego, CA
Thomas Roberts, San Diego, CA
Jack Robertson, San Diego, CA
Karen Roegner, San Diego, CA
Barbara Schell, San Diego, CA
Sid Shapiro, San Diego, CA
Judy Shively, San Diego, CA
Ian Silverman, San Diego, CA
Doug Skeen, San Diego, CA
Jan Smith, San Diego, CA
Joan Spooner, San Diego, CA
Brian Still, San Diego, CA
Karen Sumners, San Diego, CA
Mary Talbot, San Diego, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Akiko Tamano, San Diego, CA

Monica Valentino, San Diego, CA

Leland Wessel, San Diego, CA

Robert Wheeler, San Diego, CA

Evan White, San Diego, CA

Craig Woempner, San Diego, CA

Lyssa Woo, San Diego, CA

Tansy Woods, San Diego, CA

William Woods, San Diego, CA

Shandra Wright, San Diego, CA

Nita Young, San Diego, CA

Robert Alvarez, San Dimas, CA

Arax Maksoudian, San Dimas, CA

Tina Schrader, San Fernando, CA

Richard Adhikari, San Francisco, CA

Michael Anderson, San Francisco, CA

cecilia azinger, San Francisco, CA

Kimo Bailey, San Francisco, CA

Rob Bain, San Francisco, CA

Wilma Bass, San Francisco, CA

Joan Becker, San Francisco, CA

Gary Berger, San Francisco, CA

Charlie Bergstedt, San Francisco, CA

Charlene Biagi, San Francisco, CA

Joseph Blum, San Francisco, CA

Lisa Brinker, San Francisco, CA

Betsy Brown, San Francisco, CA

Daniel Celidonio, San Francisco, CA

Ravi Chandra, San Francisco, CA

S. Chapek, San Francisco, CA

Janet Chavez, San Francisco, CA

Andrew Chou-Belden, San Francisco, CA

Angel Clark, San Francisco, CA

Helynn Coles, San Francisco, CA

Barbara Conwell, San Francisco, CA

Mike Dahlin, San Francisco, CA

Sarah Date, San Francisco, CA

Helen Davis, San Francisco, CA

Christie Decker, San Francisco, CA

L. Diaz, San Francisco, CA

Lisa Disterheft, San Francisco, CA

Judith Doane, San Francisco, CA

Ramona Draeger, San Francisco, CA

Jym Dyer, San Francisco, CA

Irene Endrizzi, San Francisco, CA

Patsy Fergusson, San Francisco, CA

Michael Fleming, San Francisco, CA

Buffy Francisco, San Francisco, CA

Vince Gamboa, San Francisco, CA

Ryan Gillette, San Francisco, CA

Martha Goldin, San Francisco, CA

Sharon Handa, San Francisco, CA

Linda Hegenbarth, San Francisco, CA

Kate Hellenga, San Francisco, CA

PETER HEMENWAY, San Francisco, CA

Leslie Hendricks, San Francisco, CA

Birgit Hermann, San Francisco, CA

Amanda Hirshon, San Francisco, CA

Steven Holden, San Francisco, CA

Lisa Honig, San Francisco, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Martin Horwitz, San Francisco, CA

Nicole Hsu, San Francisco, CA

Louise Itzler, San Francisco, CA

talat jabbar, San Francisco, CA

Constance Kao, San Francisco, CA

Brendan Keenan, San Francisco, CA

Michael Kemper, San Francisco, CA

Betty Kissilove, San Francisco, CA

Andria Knapp, San Francisco, CA

Marko Knezevic, San Francisco, CA

Ady Larsen, San Francisco, CA

Jutta Leibrock, San Francisco, CA

Kendrick Lewallen, San Francisco, CA

Ruth Lym, San Francisco, CA

James Mcandrew, San Francisco, CA

Janet McGarry, San Francisco, CA

Erin McMahon, San Francisco, CA

Amy Montalvo, San Francisco, CA

Paul Mooney, San Francisco, CA

Gerald Moore, San Francisco, CA

William Mora, San Francisco, CA

Janine Moss, San Francisco, CA

Amy Moy, San Francisco, CA

Stephen Murphy, San Francisco, CA

John Musgrove, San Francisco, CA

Kevin Neeson, San Francisco, CA

Komoot Ngaojutha, San Francisco, CA

Karen Nicks, San Francisco, CA

Maria Nowicki, San Francisco, CA

John Oda, San Francisco, CA

Robert Peluso, San Francisco, CA

elena pena, San Francisco, CA

Eric Peterson, San Francisco, CA

E. Phinney, San Francisco, CA

Jackie Pomies, San Francisco, CA

Roland Prijoles, San Francisco, CA

Nancy Putney-Abernathy, San Francisco, CA

Sean Quinn, San Francisco, CA

Adrianna Quintero, San Francisco, CA

Ruta Radzins, San Francisco, CA

Sarah Reyes, San Francisco, CA

Ivan Rhudick, San Francisco, CA

Jonathan Roberts, San Francisco, CA

Nora Roman, San Francisco, CA

Roberto Romo, San Francisco, CA

Jane Salvin, San Francisco, CA

Natasha Saravanja, San Francisco, CA

Laura Saunders, San Francisco, CA

Brian Sawyer, San Francisco, CA

Edie Schaffer, San Francisco, CA

Judy Schultz, San Francisco, CA

Jeanie Scott, San Francisco, CA

Elena Seitz, San Francisco, CA

Neil Sekhri, San Francisco, CA

Peter Skala, San Francisco, CA

Erin Smith, San Francisco, CA

Todd Snyder, San Francisco, CA

Michael Sobel, San Francisco, CA

Martha Stabler, San Francisco, CA

Tai Stillwater, San Francisco, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Robert Stine, San Francisco, CA
Priscilla Stoyanof, San Francisco, CA
Joel Streicker, San Francisco, CA
Edward Sullivan, San Francisco, CA
Lucile J Taber, San Francisco, CA
Stephen Talbot, San Francisco, CA
Hong-An Truong, San Francisco, CA
Justin Truong, San Francisco, CA
Anthony Tupasi, San Francisco, CA
Pamela Vaughn, San Francisco, CA
Wolfgang Vermeer, San Francisco, CA
Preethi Vijaykrishnan, San Francisco, CA
Isabelle Wade, San Francisco, CA
Henrietta Weiner, San Francisco, CA
Linda Weiner, San Francisco, CA
Stewart Wilber, San Francisco, CA
Aimee Williams, San Francisco, CA
Jennifer Willis, San Francisco, CA
sandra yagi, San Francisco, CA
Erin Yip, San Francisco, CA
R. Zierikzee, San Francisco, CA
Christine Zupanovich, San Francisco, CA
Maxine Zylberberg, San Francisco, CA
Seeyew Mo, San Francisco, CA
A Eittinger, San Gabriel, CA
David Turner, San Gabriel, CA
Kristine Andarmani, San Jose, CA
James Barrie, San Jose, CA
Nancy Bell, San Jose, CA
Sushma Bhatia, San Jose, CA

Andrew Boyle, San Jose, CA
Colleen Cabot, San Jose, CA
Mark Cabral, San Jose, CA
Allan Campbell, San Jose, CA
Thomas Carlino, San Jose, CA
Debra Chong, San Jose, CA
Eugene Chung, San Jose, CA
Barbara Comiskey, San Jose, CA
Lawrence Deng, San Jose, CA
Ann Filor, San Jose, CA
Judith Gibbons, San Jose, CA
John Gilbert, San Jose, CA
Winston Gould, San Jose, CA
Marilyn Griffiths, San Jose, CA
Scot Guenter, San Jose, CA
William Henzel, San Jose, CA
Maryanne Hoirup-Bacolod, San Jose, CA
Meike Huizinga, San Jose, CA
Dotti King, San Jose, CA
David Laranjeira, San Jose, CA
Robert Lord, San Jose, CA
Natalie Mathison, San Jose, CA
Richard McGowan, San Jose, CA
Rosa Molina, San Jose, CA
Yukie Murata, San Jose, CA
Du Ng, San Jose, CA
Keith Pedersen, San Jose, CA
Sandra Perez, San Jose, CA
Ronald Reber, San Jose, CA
Elvia Reyna, San Jose, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Veronica Romero, San Jose, CA

Donald Saito, San Jose, CA

Tim Schwalbach, San Jose, CA

Rocky Sharma, San Jose, CA

Kelly Shepherd, San Jose, CA

Star St John, San Jose, CA

Georgiann Suhr, San Jose, CA

Darlene Thorne, San Jose, CA

Mark Verdi, San Jose, CA

Nona Weiner, San Jose, CA

Glenn Wheatland, San Jose, CA

Jennifer Williams, San Jose, CA

Jimmie Yonemoto, San Jose, CA

Dave Beck, San Juan Capistrano, CA

Kathy Fitzwater, San Juan Capistrano, CA

Philip Fraser, San Juan Capistrano, CA

Maria Menichini, San Juan Capistrano, CA

Michael Rotcher, San Juan Capo, CA

Brad Bowers, San Leandro, CA

Aj Cho, San Leandro, CA

Virginia Collins, San Leandro, CA

Randy Epstein, San Leandro, CA

Cicely Hart, San Leandro, CA

John Moreau, San Leandro, CA

Jo Quinlivan, San Leandro, CA

Robert Thistlethwaite, San Leandro, CA

Sydney Winsor, San Leandro, CA

Carol Donovan, San Lorenzo, CA

Helen Bankston, San Luis Obispo, CA

Judith Anderson, San Luis Obispo, CA

William Donovan, San Luis Obispo, CA

Raymond Ensing, San Luis Obispo, CA

Pete Evans, San Luis Obispo, CA

Judy Hornaday, San Luis Obispo, CA

Maryan Infield, San Luis Obispo, CA

Carrie Langner, San Luis Obispo, CA

lauren Ornelas, San Luis Obispo, CA

Duane Wall, San Luis Obispo, CA

Anna Alessi, San Marcos, CA

Leilani Hart, San Marcos, CA

Silvia Memminger, San Marcos, CA

Brooke Scruggs, San Marcos, CA

Sandra Spaeth, San Marcos, CA

Melba Alfaro, San Mateo, CA

Steve Bianco, San Mateo, CA

Belinda Chlouber, San Mateo, CA

Gina Colangelo, San Mateo, CA

Laurie Glatt, San Mateo, CA

Stephen Gross, San Mateo, CA

Nathan H., San Mateo, CA

Kevin Hearle Ph.D., San Mateo, CA

Christine Matsumotodeveau, San Mateo, CA

Rae Sofos, San Mateo, CA

Mary Vance, San Mateo, CA

Linda Morgan, San Pablo, CA

Rebecca Robinson, San Pablo, CA

Carol Schaffer, San Pablo, CA

Tom Earnist, San Pedro, CA

Noel Gould, San Pedro, CA

Tina Madden, San Pedro, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Kendi Ravsten, San Pedro, CA

Roman Reardon, San Pedro, CA

Dana Weiser, San Pedro, CA

Ellen Akre, San Rafael, CA

Susan Berlin, San Rafael, CA

Christina Bradley, San Rafael, CA

Belle Dedioscohen, San Rafael, CA

Eleanor Errante, San Rafael, CA

Elizabeth Ferris, San Rafael, CA

Susan Ghest, San Rafael, CA

Alexandra Guenther, San Rafael, CA

Margie Halladin, San Rafael, CA

Isabel Hogan, San Rafael, CA

Nancy Kozlenko, San Rafael, CA

Dianne Morrison, San Rafael, CA

Susan Peters, San Rafael, CA

Lornaa Pickrell, San Rafael, CA

Rus Postel, San Rafael, CA

Judith Purdom, San Rafael, CA

Sheri Remail, San Rafael, CA

Josh Richter, San Rafael, CA

Sandy Shapiro, San Rafael, CA

Philip Simon, San Rafael, CA

Robert Stark, San Rafael, CA

Deborah Temple, San Rafael, CA

John Tetzlaff, San Rafael, CA

Mitchell Turpin, San Rafael, CA

Alex Vollmer, San Rafael, CA

Ruth Vosmek, San Rafael, CA

Jeffrey Hemenez, San Ramon, CA

Kate Vermillion, San Ramon, CA

Margaret Bendig, Santa Ana, CA

Karrie Good, Santa Ana, CA

Mike Honda, Santa Ana, CA

Kristin Laughtin-Dunker, Santa Ana, CA

Sandra Ortiz, Santa Ana, CA

James Yacenda, Santa Ana, CA

Janet Adelson, Santa Barbara, CA

Dennis Allen, Santa Barbara, CA

Rebecca Amundsen, Santa Barbara, CA

Cindy Antonucci-Ameen, Santa Barbara, CA

Nicholas Beeson, Santa Barbara, CA

Lisabette Brinkman, Santa Barbara, CA

Ellen Broidy, Santa Barbara, CA

Shirley Cabeen, Santa Barbara, CA

Carole Ann Cole, Santa Barbara, CA

Ronit Corry, Santa Barbara, CA

Alison Coutts-Jordan, Santa Barbara, CA

Tara Cuellar, Santa Barbara, CA

Catharine Edwardson, Santa Barbara, CA

Christine Fedeli, Santa Barbara, CA

Terry Frewin, Santa Barbara, CA

Camille Gilbert, Santa Barbara, CA

Kevin Hanley, Santa Barbara, CA

Gillian Healed, Santa Barbara, CA

Frode Holm, Santa Barbara, CA

Lisa Hugo, Santa Barbara, CA

Cynthia James, Santa Barbara, CA

Judy Karin, Santa Barbara, CA

Lisa Ann Kelly and Family, Santa Barbara, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Larry Koppelman, Santa Barbara, CA
Betty Little, Santa Barbara, CA
Geness L Lorian, Santa Barbara, CA
Peter Melnick, Santa Barbara, CA
Marlene Mills, Santa Barbara, CA
Tosh Montee, Santa Barbara, CA
Maureen Needham, Santa Barbara, CA
Mary Nixon, Santa Barbara, CA
Martha Noble, Santa Barbara, CA
Michael Oconnell, Santa Barbara, CA
Gail Osherenko, Santa Barbara, CA
Halina Pinsker, Santa Barbara, CA
Claudio Pollero, Santa Barbara, CA
Peter Quimby, Santa Barbara, CA
Michael Stowe, Santa Barbara, CA
Richard Sutherland, Santa Barbara, CA
Lynda Unterthiner, Santa Barbara, CA
Angelika vonRoos, Santa Barbara, CA
Sally Warner-Arnett, Santa Barbara, CA
Mark Whitney, Santa Barbara, CA
Bill Woodbridge, Santa Barbara, CA
Theresa Yandell, Santa Barbara, CA
Richard Yates, Santa Barbara, CA
Jeanine Lee, Santa Clara, CA
Cruz Medina, Santa Clara, CA
Rosa Preciado, Santa Clara, CA
Michelle Balady, Santa Clarita, CA
James McKelvey, Santa Clarita, CA
Gayle Vogel, Santa Clarita, CA
Anita Wisch, Santa Clarita, CA

Milo Barisof, Santa Cruz, CA
Len Beyea, Santa Cruz, CA
Elaine Boles, Santa Cruz, CA
Sandra Brown, Santa Cruz, CA
Andrew Carman, Santa Cruz, CA
Kathleen Caton, Santa Cruz, CA
Jean Crossley, Santa Cruz, CA
MarianKitty Dennis, Santa Cruz, CA
Hepburn-Janour Ellis, Santa Cruz, CA
Richard Gallo, Santa Cruz, CA
Julie Hughes, Santa Cruz, CA
Gail Jack, Santa Cruz, CA
KEVIN KEEDY, Santa Cruz, CA
Lizann Keyes, Santa Cruz, CA
Mary Anne Kramer-Urner, Santa Cruz, CA
Nancy Krusoe, Santa Cruz, CA
Mary Kuntz-Cote, Santa Cruz, CA
Sarah Limroth, Santa Cruz, CA
Sheryl Loomis, Santa Cruz, CA
Scott Malsom, Santa Cruz, CA
Kevin Manning, Santa Cruz, CA
Janice Manov, Santa Cruz, CA
Karsten Mueller, Santa Cruz, CA
Vivienne Orgel, Santa Cruz, CA
Josh Pederson, Santa Cruz, CA
Rebecca Peet, Santa Cruz, CA
Ron Pomerantz, Santa Cruz, CA
Elizabeth Potts, Santa Cruz, CA
Benjamin Ramsden-Stein, Santa Cruz, CA
Dave Rundio, Santa Cruz, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Mary Scheller, Santa Cruz, CA
Jonathan Scher, Santa Cruz, CA
Kirsten Schwind, Santa Cruz, CA
Laura Shaw, Santa Cruz, CA
Pela Tomasello, Santa Cruz, CA
Sylvia Vairo, Santa Cruz, CA
Marilyn Veltrop, Santa Cruz, CA
Patrice Wallace, Santa Cruz, CA
Russell Weisz, Santa Cruz, CA
Carlos Arnold, Santa Maria, CA
Constance Ford, Santa Maria, CA
Roger Hart, Santa Maria, CA
Nancy Heck, Santa Maria, CA
James Kitagawa, Santa Maria, CA
Jim Mckinniss, Santa Maria, CA
Kristina Allen, Santa Monica, CA
Grisel Arriaga, Santa Monica, CA
Karen Bailey, Santa Monica, CA
Susan Black, Santa Monica, CA
Emmanuelle Bourlier, Santa Monica, CA
Chris Bradford, Santa Monica, CA
Sherry Brouman, Santa Monica, CA
Elizabeth Chang, Santa Monica, CA
Phyllis Chavez, Santa Monica, CA
Catherine Corwin, Santa Monica, CA
Lauri Crane, Santa Monica, CA
Linda Davis, Santa Monica, CA
Guillemette Epailly, Santa Monica, CA
Gina Garcia, Santa Monica, CA
Mohammad Ghorbanali, Santa Monica, CA

Pris Haffenden, Santa Monica, CA
Amelia Jones, Santa Monica, CA
Patricia Joubert, Santa Monica, CA
Kathy Knight, Santa Monica, CA
Cathy Ladman, Santa Monica, CA
Ralf Leeb, Santa Monica, CA
Daryl Marsh, Santa Monica, CA
Kristy Martin, Santa Monica, CA
Anne Munitz, Santa Monica, CA
Ted Myers, Santa Monica, CA
Brian Olson, Santa Monica, CA
Steven Perez, Santa Monica, CA
Jerry Persky, Santa Monica, CA
Jayne Pitchford, Santa Monica, CA
Donna Presley, Santa Monica, CA
Sophie Robertson, Santa Monica, CA
Mary Romanek, Santa Monica, CA
Adrian Roup, Santa Monica, CA
D. Rowe, Santa Monica, CA
Myra Schegloff, Santa Monica, CA
Gary Shapiro, Santa Monica, CA
Nancy Smith, Santa Monica, CA
Roberto Tinti, Santa Monica, CA
Frank Uddo, Santa Monica, CA
Bobbygoode Zancan, Santa Monica, CA
Harriet Zaretsky, Santa Monica, CA
George Burnham, Santa Paula, CA
Stephen Wolpin, Santa Paula, CA
Cristina Amarillas, Santa Rosa, CA
Paul Bishop, Santa Rosa, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Margaret Buhn, Santa Rosa, CA
Sandra Capecchi, Santa Rosa, CA
Phallon Davis, Santa Rosa, CA
Janet Drew, Santa Rosa, CA
Richard Fairfield, Santa Rosa, CA
Yona Flemming, Santa Rosa, CA
Fred Friedland, Santa Rosa, CA
Maureen Gevirtz, Santa Rosa, CA
Penny Hamilton, Santa Rosa, CA
Philip Hansten, Santa Rosa, CA
Michael Hutchison, Santa Rosa, CA
Robin Jurs, Santa Rosa, CA
C McGuirk, Santa Rosa, CA
Bob Miller, Santa Rosa, CA
Erin Moilanen, Santa Rosa, CA
Richard Nolen, Santa Rosa, CA
Norma Ortman, Santa Rosa, CA
Shirley Phillips, Santa Rosa, CA
Gary Pischke, Santa Rosa, CA
Daniel Podell, Santa Rosa, CA
Cindi Rivas, Santa Rosa, CA
Joe Salazar, Santa Rosa, CA
Gail Seymour, Santa Rosa, CA
Marcia Sheaves, Santa Rosa, CA
Olaina Silva, Santa Rosa, CA
Paige Sobel, Santa Rosa, CA
Anton Teytaud, Santa Rosa, CA
David Vandever, Santa Rosa, CA
April West, Santa Rosa, CA
Rhea Zaks, Santa Rosa, CA

Sebastian Allinder, Santee, CA
James Braun, Santee, CA
Theresa McCarthy, Santee, CA
Greg Denari, Saratoga, CA
Mike Finck, Sausalito, CA
Tricia Gellman, Sausalito, CA
Evan Jane Kriss, Sausalito, CA
Mary Mongan, Sausalito, CA
Jason Tunnell, Sausalito, CA
Margaret Ward, Sausalito, CA
Rob Dun, Scotts Valley, CA
Megan Hawk, Scotts Valley, CA
Barry Buckheim, Seal Beach, CA
Julie Ford, Seal Beach, CA
Jillian Gallery, Seal Beach, CA
Pamela Miller, Seal Beach, CA
Brent Spencer, Seal Beach, CA
Felicia Bander, Sebastopol, CA
Edith Barry, Sebastopol, CA
Jacqueline Braun, Sebastopol, CA
Glenn Finch, Sebastopol, CA
Anna Kaufman, Sebastopol, CA
Joe LeBlanc, Sebastopol, CA
William Olzman, Sebastopol, CA
Tamara Voyles, Sebastopol, CA
Amanda Zangara, Sebastopol, CA
Mark Coller, Shasta Lake, CA
Lisa Salazar, Shasta Lake, CA
Gene Arias, Sherman Oaks, CA
Carol Becker, Sherman Oaks, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Georgia Brewer, Sherman Oaks, CA

Mark Fletcher, Sherman Oaks, CA

Caroline Good, Sherman Oaks, CA

Cathy Janacua, Sherman Oaks, CA

Dwayne Jones, Sherman Oaks, CA

Samar Lachini, Sherman Oaks, CA

RICHARD AND SHARON MAYER, Sherman Oaks, CA

Gaye Nelson, Sherman Oaks, CA

Patrick Pade, Sherman Oaks, CA

Amanda Palley, Sherman Oaks, CA

Alison Reisel, Sherman Oaks, CA

Patricia Ritter, Sherman Oaks, CA

Mox Ruge, Sherman Oaks, CA

Giuliano Sartori, Sherman Oaks, CA

Kay Steele, Sherman Oaks, CA

Leslie Tolan, Sherman Oaks, CA

Sherri Donlon, Shingle Springs, CA

Elizabeth Ball, Sierra Madre, CA

Patricia Barron, Sierra Madre, CA

Robert Buckner, Sierra Madre, CA

Renee Cossutta, Sierra Madre, CA

Jacqueline Fisher, Sierra Madre, CA

John Lamb, Sierra Madre, CA

Jill Sumiyasu, Sierra Madre, CA

Natalie Garth, Silverado, CA

Nina Macdonald, Silverado, CA

Jerry Dewitt, Simi Valley, CA

Gina Howell, Simi Valley, CA

Katrina Livingston, Simi Valley, CA

K. C. Mccarthy, Simi Valley, CA

Madison Mitchell, Simi Valley, CA

Gulshan Oomerjee, Simi Valley, CA

brooke schick, Simi Valley, CA

Jessica Smith, Simi Valley, CA

Laurie Neill, Smith River, CA

Christy Bulskov, Solana Beach, CA

Susan Kirkpatrick, Solana Beach, CA

Sheila Silan, Somerset, CA

Linda Whitney, Somerset, CA

Diane Baarbera, Sonoma, CA

Tarney Baldinger, Sonoma, CA

Lana Bruski, Sonoma, CA

Kate Farrell, Sonoma, CA

John Feissel, Sonoma, CA

Francesca Fifis, Sonoma, CA

Avram Goldman, Sonoma, CA

Kent Iverson, Sonoma, CA

Barbara Jacobsen, Sonoma, CA

Andrew Keasler, Sonoma, CA

Kris Kelly, Sonoma, CA

Elizabeth Vaughn, Sonoma, CA

Shelley Winn, Sonoma, CA

Michelle Allison, Sonora, CA

Leslie Kowalczyk, Sonora, CA

Sharon Rose, Sonora, CA

Kathy Berry, Soquel, CA

Robert Darcy, Soquel, CA

Gary Landgrebe, Soquel, CA

Pamela Machutt, Soquel, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Leslie Potenzo, Soquel, CA
Cecelia Crane, South Lake Tahoe, CA
Morgan Machen, South Lake Tahoe, CA
Max Benavidez, South Pasadena, CA
Norman Bentson, South Pasadena, CA
Heather Clyde, South Pasadena, CA
Kelly Finley, South Pasadena, CA
Thomas Fong, South Pasadena, CA
Sandra Kitto, South Pasadena, CA
Joshua Klaparda, South Pasadena, CA
Karin Manger, South Pasadena, CA
Sandra Zicke, South San Francisco, CA
Jennifer Bradford, Spring Valley, CA
George Schieck, Spring Valley, CA
Terrie Smith, Spring Valley, CA
Toni Watson, Spring Valley, CA
Rachel Gibson, Stanford, CA
Monika Greenleaf, Stanford, CA
Janice Beyer, Stockton, CA
Jackie Bronder, Stockton, CA
Paul Takhar, Stockton, CA
Sheena Bhindie, Studio City, CA
Christopher Brown, Studio City, CA
Andrew Hyman, Studio City, CA
Nancy Knipe, Studio City, CA
Susan Lea, Studio City, CA
Elisa Marsh, Studio City, CA
Aaron Mendelsohn, Studio City, CA
Suzanne Naegle, Studio City, CA
Julie Skille, Studio City, CA

Natalia Spornik, Studio City, CA
Jeremy Trimm, Suisun City, CA
Robin Van Tassell, Summerland, CA
Katharine Warner, Sunland, CA
Kimberly Zimmerman, Sunland, CA
Victoria Armigo, Sunnyvale, CA
Scott Barlow, Sunnyvale, CA
Ernest Boyd, Sunnyvale, CA
Lenore Cohen, Sunnyvale, CA
Susan Johnson, Sunnyvale, CA
Liana Laskin, Sunnyvale, CA
Iztok Marjanovic, Sunnyvale, CA
Robert Park, Sunnyvale, CA
Mark Philips, Sunnyvale, CA
Bryan Richter, Sunnyvale, CA
John Robbins, Sunnyvale, CA
Kris Stadelman, Sunnyvale, CA
Gerald Tinder, Sunnyvale, CA
Rose-Marie Twu, Sunnyvale, CA
Mary White, Sunnyvale, CA
Sandra Hendricks, Sutter Creek, CA
Delores Abramson, Sylmar, CA
Diane Boucher, Sylmar, CA
Paul Enders, Sylmar, CA
Robert Iaccino, Sylmar, CA
Nancy Nolen, Sylmar, CA
Vicki Smith, Sylmar, CA
Andrew Patton, Tahoe Vista, CA
Frank Watts, Tahoe Vista, CA
El. Pe., Talmage, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Louise Bianco, Tarzana, CA
Cecly Corbett, Tarzana, CA
Roger Hollander, Tarzana, CA
Beth Hamilton, Tehachapi, CA
Deborah Hand, Tehachapi, CA
Gary Baker, Temecula, CA
Richard Blain, Temecula, CA
Holly Hall, Temecula, CA
Sofia Okolowicz, Temecula, CA
Anthony Terich, Temecula, CA
Christine Lew, Temple City, CA
Linda Skorheim, Temple City, CA
Cassie A. Murphy, Templeton, CA
Deborah Filipelli, PhD, The Sea Ranch, CA
Victoria Behar, Thousand Oaks, CA
Bob Fryer, Thousand Oaks, CA
Ibia Gomez, Thousand Oaks, CA
Marc Orfanos, Thousand Oaks, CA
Katherine Strong, Thousand Oaks, CA
Richard Sugerman, Thousand Oaks, CA
Paul Teplitz, Thousand Oaks, CA
Karissa Turner, Thousand Oaks, CA
Douglas Foster, Three Rivers, CA
Lorraine Grace, Tiburon, CA
Timothy McCollum, Tollhouse, CA
Marti Hale, Toluca Lake, CA
Madelyn Hodges, Tomales, CA
Donna Cetorelli, Topanga, CA
Mae Hein, Topanga, CA
Jon Povill, Topanga, CA

Nora Slattery, Topanga, CA
Adrien Thein-Sandler, Topanga, CA
Penelope Ward, Topanga, CA
Ruth Ehrenberg, Torrance, CA
Joyce Harrington, Torrance, CA
Edwin Miller, Torrance, CA
Faye Ryan, Torrance, CA
Erin Suyehara, Torrance, CA
Mary Walker, Torrance, CA
Jinx Hydeman, Trabuco Canyon, CA
Deborah Mueller, Trabuco Canyon, CA
Karen Negus, Trabuco Canyon, CA
Gloria Sefton, Trabuco Canyon, CA
Vasuki Nijagal, Tracy, CA
David Freeman, Truckee, CA
Brett Bell, Tujunga, CA
Darlene Goguen, Tujunga, CA
Probyn Gregory, Tujunga, CA
Charleen Schendel, Turlock, CA
Everett A. Vieira III, Turlock, CA
Perry Gx, Tustin, CA
Veronica Noguer, Tustin, CA
Jim Estus, Twentynine Palms, CA
Jorge DeCecco, Ukiah, CA
Tisha Douthwaite, Ukiah, CA
Mary Gustafson, Ukiah, CA
Lisa Hillegas, Ukiah, CA
Judy Morgan, Ukiah, CA
Raymond Radell, Ukiah, CA
Ernest Walters, Union City, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Courtney Christoffer, Upland, CA
Kristen Osman, Upland, CA
Yvonne Smith, Upland, CA
Janet Sturgeon, Upland, CA
Becky Cecena, Vacaville, CA
Michael Heffernan, Vacaville, CA
Lorraine Lowry, Vacaville, CA
Adrianne. Micco, Vacaville, CA
Carole Lutness, Valencia, CA
Donald Van Santen, Valencia, CA
Karen Black, Vallejo, CA
Valerie Duda, Vallejo, CA
Karen Eft, Vallejo, CA
Jocelyn Graef, Vallejo, CA
Ann Harrison, Vallejo, CA
Lorri Humberd, Vallejo, CA
David Macdonald, Vallejo, CA
Diane Merrick, Vallejo, CA
Marni Nacheff, Vallejo, CA
Nikki Nafziger, Vallejo, CA
Dave Smail, Vallejo, CA
Carrie Trochet, Vallejo, CA
Lenette Weishaar, Vallejo, CA
Laura Diffenbaugh, Valley Springs, CA
Gerald Vietor, Valley Springs, CA
Laura Holmes, Valley Village, CA
Darynne Jessler, Valley Village, CA
Anne Kurtzman, Valley Village, CA
Andrew Sigal, Valley Village, CA
Stokes Stanzi, Valley Village, CA

Dianna Davidson, Van Nuys, CA
Valerie Ferrante, Van Nuys, CA
Mark Heiliger, Van Nuys, CA
Susan Jones, Van Nuys, CA
Janet Laur, Van Nuys, CA
Vicki Modesti, Van Nuys, CA
Ana Reedy, Van Nuys, CA
P Soucek, Van Nuys, CA
Ken Windrum, Van Nuys, CA
Jesse Croxton, Venice, CA
Ann Ducommun, Venice, CA
Arnaud Dunoyer, Venice, CA
Zoe Friedman, Venice, CA
Frank Krentzman, Venice, CA
Linda Laisure, Venice, CA
Nancy Lombardi, Venice, CA
Brendan Miller, Venice, CA
Ruth Seroussi, Venice, CA
Chris Tilly, Venice, CA
Jamie Wolf, Venice, CA
Farrah Zeigler, Venice, CA
Robert Brunner, Ventura, CA
Gary Channer, Ventura, CA
David Cotner, Ventura, CA
Laura Elam, Ventura, CA
Jamie Green, Ventura, CA
Suzanne Guthrie, Ventura, CA
Helen Johnson, Ventura, CA
Erin Kraus, Ventura, CA
Elizabeth Ladiana, Ventura, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jan Langer, Ventura, CA
Carrie Mc, Ventura, CA
Jane Niehaus-Tull, Ventura, CA
Mary Stanistreet, Ventura, CA
Wendy Steiger, Ventura, CA
Elaine Stephenson, Ventura, CA
Krista Stevenson, Ventura, CA
Chelsea Sutula, Ventura, CA
Mike Trivich Trivich, Ventura, CA
Melissa Vasconcellos, Ventura, CA
LeAnn Walters, Ventura, CA
Kathy Yeomans, Ventura, CA
Carol Wiley, Victorville, CA
Alonna Farrar, Vista, CA
James Hagar, Vista, CA
Joleen Hirscher, Vista, CA
Trisha Pahmeier, Vista, CA
Constance Youens, Vista, CA
Keith Forrest, Volcano, CA
Michael Shapiro, W. Hollywood, CA
Chris Dissanayake, Walnut, CA
Erfin Hartojo, Walnut, CA
Rita Thio, Walnut, CA
Sarah Adams, Walnut Creek, CA
Ana Belle, Walnut Creek, CA
Nancy Bocanegra, Walnut Creek, CA
Susan Desmond, Walnut Creek, CA
Lu Einer, Walnut Creek, CA
Annette Eisenbergsmith, Walnut Creek, CA
Julia Fuller, Walnut Creek, CA

Janicedotherighthing Greenberg, Walnut Creek, CA
Barbara Greenwood, Walnut Creek, CA
Joan Johnston, Walnut Creek, CA
Emmanuel Lagpacan, Walnut Creek, CA
Barb Linc, Walnut Creek, CA
Anne M Stewart, Walnut Creek, CA
Ginger Megley, Walnut Creek, CA
Patricia Raso, Walnut Creek, CA
Stanley Smith, Walnut Creek, CA
Nancy Thursby, Walnut Creek, CA
Jan Warren, Walnut Creek, CA
David Wendt, Walnut Creek, CA
Virginia Wheaton, Walnut Creek, CA
Randall Wiley, Walnut Creek, CA
Pam Nelson, Warner Springs, CA
Marguerite Barragan, Watsonville, CA
Paul Cheney, Watsonville, CA
Joe Gallagher, Watsonville, CA
Ana Hernandez, Watsonville, CA
Roberta Krenz, Watsonville, CA
Laura Maitra, Watsonville, CA
Steffany Mccabe, Watsonville, CA
Sarah Peck, Watsonville, CA
Celeste Stanik, Watsonville, CA
Susan Hazard, Weaverville, CA
Randolph Yates, Weaverville, CA
John Brennan, Weed, CA
John Allen, West Covina, CA
Lauren Flahive, West Covina, CA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Meilee Langi, West Covina, CA
Donald Overlin, West Covina, CA
Fernando Ramirez, West Covina, CA
Susan Zaragoza, West Covina, CA
Rebecca Clark, West Hills, CA
Paul Hogan, West Hills, CA
Linda Howie, West Hills, CA
Abbie Bernstein, West Hollywood, CA
Howard H. Holmes, West Hollywood, CA
Susan Mathison, West Hollywood, CA
Christina Nillo, West Hollywood, CA
Kathy Scher, West Hollywood, CA
Dolores Scozzesi, West Hollywood, CA
Jon Sperry, West Hollywood, CA
Andrew Hamilton, West Sacramento, CA
Signe Wetteland, West Sacramento, CA
Barbara E., Westlake Village, CA
Jeanne Harrison, Westlake Village, CA
Lia Woodward, Westlake Village, CA
Michael Lawler, Westminster, CA
Brandon Lowentrout, Westminster, CA
Tina Colafranceschi, Whitethorn, CA
Jo Beede, Whittier, CA
Narcissa Enzmann, Whittier, CA
Vanessa Leal, Whittier, CA
Robert Palomino, Whittier, CA
Jose Rodriguez, Whittier, CA
Jan Joe, Windsor, CA
Barbara Lyon, Windsor, CA
Allison McConnell, Windsor, CA

Susan Bohannon, Winnetka, CA
Andre Plessis, Winnetka, CA
Caryn Banque, Woodland, CA
Kay Bogart, Woodland, CA
Donna Bousquet, Woodland, CA
Sheri Masterson, Woodland, CA
Ellie Slaven, Woodland, CA
Gretchen Smurr, Woodland, CA
Susan George-Rydberg, Woodland Hills, CA
Bobbi Goldin, Woodland Hills, CA
Michael Goldman, Woodland Hills, CA
Willie Hill, Woodland Hills, CA
Arax Lanman, Woodland Hills, CA
Stephanie Larro, Woodland Hills, CA
Lorraine Priceman, Woodland Hills, CA
Victoria Riskin, Woodland Hills, CA
Jollee Saphier, Woodland Hills, CA
Marc Tarpenning, Woodside, CA
Kathleen Fernandez, Yorba Linda, CA
Peggie Kirkpatrick, Yorba Linda, CA
Ben Mckinstry, Yorba Linda, CA
Gabriel Graubner, Yountville, CA
Carole Evers, Yucaipa, CA
Kt Gates-Waldrup, Yucaipa, CA
Jo Bollen, Yucca Valley, CA
Rose Bachman, CA 90001
Leonardo Corro, CA 90001
Penelope Daily, CA 90001
Adrian Juarez, CA 90001
Denise Miceli, CA 90001



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Michele Carrizalez, CA 90002

Julio Robledo, CA 90003

Vanessa Bayer, CA 90004

Shirley Hey, CA 90004

Glen Morgan, CA 90004

Grant Sloss, CA 90004

Jeremy Tague, CA 90004

Candy Kaiser, CA 90005

David Mack, CA 90005

Henry Muniz, CA 90005

Jorge Valle-Artiga, CA 90005

Michelle Rito, CA 90006

Tripti Kamath, CA 90007

Beth Palkovic, CA 90007

Joshua Yeargain, CA 90007

Gail Gentry, CA 90008

Fred Mosbey, CA 90008

Scott Baird, CA 90010

Jessie Hahn, CA 90010

Barbara Hoke, CA 90010

Hector Arroyo, CA 90011

Bruce Stout, CA 90011

Lisa Callahan, CA 90012

Wendy Vinglinsky, CA 90012

Narda Zacchino, CA 90012

Drex Heikes, CA 90013

Jolie Krance, CA 90013

J Magnuson, CA 90013

Adam Miller, CA 90013

Sigmund Palasek, CA 90013

Michael Vizcarrondo, CA 90013

Linda Desola, CA 90014

Andrew Matson, CA 90014

Glicelia Avila, CA 90015

Chad Sarver, CA 90015

Ricky Shum, CA 90015

Gary Williams, CA 90015

Theodore Burton, CA 90016

Michael Damanskis, CA 90016

Victoria Kemsley, CA 90016

Joan Benjamin, CA 90017

Lisa Shinavier, CA 90018

Jo Trigo, CA 90018

Sarah Boldt, CA 90019

Dejarne Bourne, CA 90019

Sharron Craig, CA 90019

Brian Dent, CA 90019

Uri Fleming, CA 90019

Jennifer Griffin, CA 90019

Julia Hasen, CA 90019

Ksenia Koban, CA 90019

Jane Martin, CA 90019

Jaimie Mullens, CA 90019

Thuyvan Nguyen, CA 90019

Kevin Proulx, CA 90019

Daniel Shapiro, CA 90019

Melody Thornton, CA 90019

Karen Tillman, CA 90019

Daniel Yoo, CA 90019

James Jackson, CA 90020



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Gerald Park, CA 90020

Alexandra Weinberger, CA 90020

Amishi Shah, CA 90021

Mills Davis, CA 90022

Steven Baaden, CA 90024

Geoffrey Bogeaus, CA 90024

Geoff Bywater, CA 90024

Susan Friedman, CA 90024

Janet Hirsch, CA 90024

Melodie Hollander, CA 90024

Kiera Kosciulek, CA 90024

Christine Oldenbrook, CA 90024

Kevin Poirier, CA 90024

Wendy Richmond, CA 90024

Phillip Savenick, CA 90024

Joel Smith, CA 90024

Jeremy Vernon, CA 90024

Joseph Ziomek, CA 90024

Philip Bartolf, CA 90025

Phyllis Gabriel, CA 90025

Kathryn Hyder, CA 90025

Harriet Levine, CA 90025

Rachel McClard, CA 90025

Harvey Myman, CA 90025

John Stapleton, CA 90025

Danielle Stclair, CA 90025

Rosie Alvarenga, CA 90026

Rochelle Bassarear, CA 90026

Hugo Chavez, CA 90026

Danika Choe, CA 90026

Henry Estrada, CA 90026

Jonathan Gibson, CA 90026

Melissa Jones, CA 90026

Margaret Kingsbury, CA 90026

Raen Malone, CA 90026

Frances Maloney, CA 90026

Rebecca Rufer, CA 90026

Toby Tannenbaum, CA 90026

Alison Waller, CA 90026

Paul Brittain, CA 90027

Devlyn Corrigan, CA 90027

Morgan Doverpearl, CA 90027

Terri Foster, CA 90027

Kathryn Nelson, CA 90027

Jb Popplewell, CA 90027

Autumn Reeser, CA 90027

Manuel Rodriguez, CA 90027

Michele Sohnen, CA 90027

Zackary Taylor, CA 90027

Lisa Wallace, CA 90027

Lisa Carney, CA 90028

Melissa Gelmo, CA 90028

Kendra Miller, CA 90028

Coleen Novak, CA 90028

Morgan Bleuel, CA 90029

Suzanne Carney, CA 90029

Andrew Gage, CA 90029

Jessica Rosen, CA 90029

Gustavo Torres, CA 90029

Audrey Arkins, CA 90031



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Lourdes Beltran, CA 90031
Nathana Schooler, CA 90031
Misty Arceneaux, CA 90032
Tony Beck, CA 90032
Zoely Biel, CA 90032
Raymond Dangelo, CA 90032
Arturo Jauregui, CA 90032
George Torres, CA 90032
Jazmin Ortega, CA 90033
Mitchell Roberts, CA 90033
Annie Wong, CA 90033
Victoria Brago, CA 90034
Gonzalez Cani, CA 90034
Stanley Coleite, CA 90034
Cristina Cruz, CA 90034
Claudia Garcia, CA 90034
David Hawthorne, CA 90034
Elisa Iovine, CA 90034
Delia Lopez, CA 90034
Annie Orange, CA 90034
Nicole Pina, CA 90034
Tucker Poindexter, CA 90034
Michael Raileanu, CA 90034
Collin Reynolds, CA 90034
Elizabeth Rose, CA 90034
Frank Sorkin, CA 90034
Bernestine Taylor, CA 90034
Brandon Vineyard, CA 90034
Florence Williams, CA 90034
Tricia Berman, CA 90035

Mitchell Cohen, CA 90035
Andrew David, CA 90035
Marcy Kelly, CA 90035
Randall Leighton, CA 90035
Steven Luftman, CA 90035
Sara Mattison, CA 90035
Jordyn Ostroff, CA 90035
Brenda Ruttenberg, CA 90035
Joan Sobel, CA 90035
Crystal Us, CA 90035
Stacy Barninger, CA 90036
Lauren Bopp, CA 90036
Jennifer Brett, CA 90036
Anne Brilliant, CA 90036
Claire Castle, CA 90036
Paqueta Davis, CA 90036
Marisa Duarte, CA 90036
Alan Ehrlich, CA 90036
Thomas Gossard, CA 90036
Suzanna Griffith, CA 90036
Henry Johnson, CA 90036
Kevin Keenan, CA 90036
Chad Kenward, CA 90036
Anne Madariaga, CA 90036
Gabrielle Mahdesian, CA 90036



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Eric Opanga, CA 90036
Bill Petrotta, CA 90036
Micah Pittard, CA 90036
Cherie Sandum, CA 90036
Rick Wartzman, CA 90036
Gregory Mitchell, CA 90037
Daniel Shaw, CA 90037
Ellynn Brown, CA 90038
Justin Horowitz, CA 90038
Kenneth Rincon, CA 90038
Dominick Romain, CA 90038
Reiss Clauson-Wolf, CA 90039
Sean Cooley, CA 90039
Melodie Mcdaniel, CA 90039
Paulina Quintana, CA 90039
Erik Rhey, CA 90039
Annelle Grajeda, CA 90040
Pablo Vargas, CA 90040
Francesca Fiorentini, CA 90041
Teru Kanazawa, CA 90041
Michael Nehring, CA 90041
Paul Vallejo, CA 90041
Jennifer Wilson, CA 90041
Martamaria Cross, CA 90042
Laura Cultrera, CA 90042
Vincent Delley, CA 90042
Ann Diederich, CA 90042
Austin Flack, CA 90042
Jacqueline Hardy, CA 90042
Brendan Hughes, CA 90042

James Knudsen, CA 90042
Michele Lavecchia, CA 90042
Nancy Sharrett, CA 90042
Yolanda Duvernay, CA 90043
Carla Huckaby, CA 90043
Janice Kingcade, CA 90043
Emma Rivera, CA 90043
Larry Roberson, CA 90043
Teraesa Vinson, CA 90043
Monique Browne, CA 90044
Michael Hall, CA 90044
Vincent Marzullo, CA 90044
Diane Corbin, CA 90045
Michael Eberly, CA 90045
Shay Gipson, CA 90045
Sasha Kushner, CA 90045
Jason Phillips, CA 90045
Robyn Rhinehart, CA 90045
Lilian Salvatore, CA 90045
Eleanor Schwartz, CA 90045
Shannon Algeo, CA 90046
sharon barber, CA 90046
Nicholas Barlow, CA 90046
Rusty Buchanan, CA 90046
Peter Burns, CA 90046
Laniesha Butler, CA 90046
Monique Caulfield, CA 90046
Sukee Chew, CA 90046
Lisa Crilley, CA 90046
Jonathan Darr, CA 90046



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Kae Erickson, CA 90046

Taylor Forbes, CA 90046

Mary Haskell, CA 90046

Jason Hicks, CA 90046

Paula Hooks, CA 90046

Daniel Howell, CA 90046

Corey Jiannalone, CA 90046

Michael Kelleher, CA 90046

Rada Konvisser, CA 90046

Meredith Lovegrove, CA 90046

Christopher Mcfarland, CA 90046

Matthew Nolinleblanc, CA 90046

Nancy Priddy, CA 90046

Sydney Van Gorp, CA 90046

Linda Cryer, CA 90047

Claire Evans, CA 90047

Franklin Marline, CA 90047

Marvin Zacharie, CA 90047

Cayla Bonn, CA 90048

Lucy Bradley, CA 90048

James Forrester, CA 90048

Deborah Glass, CA 90048

Douglas Long, CA 90048

Eric Ortner, CA 90048

David Resnik, CA 90048

James Rounds, CA 90048

Stephen Viens, CA 90048

Charlene Williams, CA 90048

Susan Bleacher, CA 90049

Ronda Gomezquinones, CA 90049

Judith Gordon, CA 90049

Andrea Green, CA 90049

Nicole Hillebrandt, CA 90049

Steven Hitter, CA 90049

Theresa Kvale, CA 90049

Laurel Newbound, CA 90049

Katie Ng, CA 90049

Arnold Platzker, CA 90049

Paul Puri, CA 90049

Rebecca Sperber, CA 90049

Matthew Tolchin, CA 90049

Marshall King, CA 90056

Richard Krelle, CA 90056

Cynthia Mason, CA 90056

Andreda Pruitt, CA 90056

Sylvia Swilley, CA 90056

Carmencita Solidum, CA 90057

Cynthia Hawkins, CA 90059

Daniel Zepeda, CA 90059

Dana Hubert, CA 90061

Yanscy Flores, CA 90063

Beatriz Higuera, CA 90063

Kathy Rose, CA 90063

Nicole Bergelson, CA 90064

Thomas Byrnes, CA 90064

Shellie Collier, CA 90064

Karin Diskin, CA 90064

Karen Edgerton, CA 90064

Matthew Fillman, CA 90064

Jody Frank, CA 90064



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Robert Gage, CA 90064

Mark Hembree, CA 90064

Linda Levy, CA 90064

Jennie Maguen, CA 90064

Michael McIntyre, CA 90064

Susan Montgomery, CA 90064

Barbara Satinover, CA 90064

Michael Schaffer, CA 90064

Cindy Sison, CA 90064

Ruth Strauss MD, CA 90064

Barbara Trelease, CA 90064

Jill Uhlenkott, CA 90064

Julie Ahlberg, CA 90065

Maria Borden, CA 90065

Lamar Damon, CA 90065

Sarah Soquel Morhaim, CA 90065

Arthur Shapiro, CA 90065

Carlos Tobar, CA 90065

Maria Warmoth, CA 90065

Kelly Aeolan, CA 90066

Ethan Arnold, CA 90066

Peter Basch, CA 90066

Barbara Berney, CA 90066

Faith Brewer, CA 90066

Stephanie Davis Don, CA 90066

Sarah Epperson, CA 90066

Timothy Groff, CA 90066

Gilbert Guerra, CA 90066

Akhil Gupta, CA 90066

Camille Harris, CA 90066

Luann Jaffe, CA 90066

Alex Kruglov, CA 90066

Danielle Loefflad, CA 90066

Sean Porter, CA 90066

Eileen Selogie, CA 90066

Sondra Yevette, CA 90066

Robert Zaugh, CA 90066

Morgan Chu, CA 90067

Laura Cordovano, CA 90067

Howard Fredman, CA 90067

Stephanie Marshall, CA 90067

Susan Rodriguez, CA 90067

Shelly Rothschild, CA 90067

Wesley Strick, CA 90067

Jason Wallach, CA 90067

Nancee Allen, CA 90068

Lynn Collings, CA 90068

Jodi Ehrlich, CA 90068

Brian Henson, CA 90068

Tim Long, CA 90068

Kay Morris, CA 90068

Shane Nguyen, CA 90068

Jimmy Wachtel, CA 90068

Wendy Alvarez, CA 90069

Frank Baquero, CA 90069

Daniel Cohen, CA 90069

Nicole Cutright, CA 90069

Wendy Lipin, CA 90069

Jennifer Martin, CA 90069

Kent McCallister, CA 90069



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jordan Rosenberg, CA 90069

Meir Shamy, CA 90069

Matthew Shields, CA 90069

Sara West, CA 90069

Tambi Yu, CA 90069

Robert Daly, CA 90077

Matthew Harrison, CA 90077

Richard Kipper, CA 90077

Francine Maisler, CA 90077

Stephen Sohmer, CA 90077

Amarjit Soni, CA 90077

Forrest Walsh, CA 90077

Jonathan Leahy, CA 90078

Kevin Chang, CA 90079

Jill Klein, CA 90093

Joan Shapiro, CA 90094

Laura Barajas, CA 90201

Juan Guerrero, CA 90201

Efrain Meda, CA 90201

Marie Sia, CA 90201

Lori Soto, CA 90201

Nestor Valencia, CA 90201

Sathara Duong, CA 90210

Jasmine Folden, CA 90210

Victoria Jahanmardi, CA 90210

Amir Kojoory, CA 90210

Eve Rodsky, CA 90210

Arnold Stiefel, CA 90210

Dawn Eliashiv, CA 90211

Alexandra Feldman, CA 90211

Marcie Alexander, CA 90212

Josh Millet, CA 90212

Shareef Aquil, CA 90220

Emily Ragobeer, CA 90220

Kelly Gardner, CA 90221

Stefanie Cleaver, CA 90222

Yolanda Melvinnelms, CA 90222

Brian Decato, CA 90230

Barbara Golbin, CA 90230

Patricia Hughes, CA 90230

Sharon Kerson, CA 90230

James Miller, CA 90230

Pat Nomura, CA 90230

Joanna Rowles, CA 90230

Glenn Stewart, CA 90230

Lilli Valtierra, CA 90230

Glenda Wina, CA 90230

Jeremy Zuniga, CA 90230

Bill Birdsall, CA 90232

Mark Galanty, CA 90232

Jonathan Glater, CA 90232

Jim Hornstein, CA 90232

Joy Kecken, CA 90232

Parisa Mirzadehgan, CA 90232

Helki Zeigler, CA 90239

Anita Boorman, CA 90240

Xavier Granados, CA 90240

Salvador Padill, CA 90240

Bernice Caan, CA 90241

Walter Connick, CA 90245



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Rhonda Haley, CA 90245

Chris Miller, CA 90245

Sarah Mosseller, CA 90245

Judy Smith, CA 90245

Gloria Telles, CA 90245

Diane Trevizo, CA 90245

Josephine Baltazar, CA 90249

Marion Dwyer, CA 90250

Julio Gavio, CA 90250

Ellen King, CA 90250

Megan Klein, CA 90250

Maureen Kleinman, CA 90250

Viki Short, CA 90250

Carl Weibel, CA 90250

David Adler, CA 90254

Megan Bowers, CA 90254

Chas Costello, CA 90254

Caitlin Dahl, CA 90254

Martin Fogel, CA 90254

Ann Gotthoffer, CA 90254

Carol Horne, CA 90254

Alicia Jones, CA 90254

Kimberly Legrand, CA 90254

Rosanna Savone, CA 90254

Angel Alva, CA 90260

Anthony Owens, CA 90260

Zenaida Alfaro, CA 90262

Tabitha Dileo, CA 90264

Robert Adler, CA 90265

Maureen De Koff, CA 90265

Jeff Eisen, CA 90265

Marla Hosie, CA 90265

Constance Shafran, CA 90265

Georgia Cano, CA 90266

Bradley Dodge, CA 90266

Carol Dormer, CA 90266

Ralph Goldstein, CA 90266

Otto Gudiel, CA 90266

Brittany Hilgendorf, CA 90266

Lynn Smith, CA 90266

Lisa Taub, CA 90266

Sara Thaves, CA 90266

Lynn Werner, CA 90266

Irene White, CA 90266

Dorothy Yungman, CA 90266

Brooke Covington, CA 90272

Kimberly Michel, CA 90272

Weston Naef, CA 90272

Leo Perez, CA 90272

Nora Perricone, CA 90272

Peter Rogers, CA 90272

Ellie Ross, CA 90272

Patricia Sinclair, CA 90272

Paul Solomon, CA 90272

Christine Steele, CA 90272

Michael Chiado, CA 90274

Michael Eicher, CA 90274

Janis Fitzsimmons, CA 90274

Arthur Friedman, CA 90274

Yvonne Godfrey, CA 90274



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Karen Govenar, CA 90274

Lawrence Maltz, CA 90274

Colleen Mullooney, CA 90274

Sandra Peck, CA 90274

Ellie Berkowitz, CA 90275

Virendra Kadakia, CA 90275

Louis Krouse, CA 90275

Mark Martinez, CA 90275

Teri Perez, CA 90275

Jason Rosenfeld, CA 90275

Sandra Brilliant, CA 90277

Christine Coffelt, CA 90277

Patrick Daley, CA 90277

Victoria DeFrank, CA 90277

Donna Haupt, CA 90277

Angelica Hurd, CA 90277

Carol Mckeown, CA 90277

Melanie Nelson, CA 90277

Pamela Popovich, CA 90277

Larry Styza, CA 90277

Marc Teitelbaum, CA 90277

Deborah Vaia, CA 90277

David Barnes, CA 90278

Nancy Bartolo, CA 90278

Juan Mansill, CA 90278

Nicole Smith, CA 90278

Daniel Wallace-Brewster, CA 90278

Sandra Flores, CA 90280

Marilyn Ball, CA 90290

Cynthia Hodnett, CA 90290

Angela Mogg, CA 90290

Coon Bruno, CA 90291

Naomi Saldana, CA 90291

Paula Silver, CA 90291

Donna Sylvester, CA 90291

Harbans Ahluwalia, CA 90292

Jason Bohrer, CA 90292

Kelli Cardiff, CA 90292

Jennifer Chiu, CA 90292

Kylie Clark, CA 90292

Courtney Nichols-Gould, CA 90292

Sanya Obsivac, CA 90292

Larry Otting, CA 90292

Michael Perry, CA 90292

Rainer Poertner, CA 90292

Scott Sewell, CA 90292

Nancy Wergeles, CA 90292

Richard Benzel, CA 90293

Louise Lance, CA 90293

Nicole Martinez, CA 90293

Bonnie Mishelevich, CA 90293

Michelle Ouellet, CA 90293

Bob Oyama, CA 90293

Jennifer Rice, CA 90293

Stanley Sharpe, CA 90293

Amy Bell, CA 90301

Debra Lockie, CA 90301

Dawn Sitahal, CA 90301

Annie Flowal, CA 90302

Maria Marchand, CA 90302



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Roy Smith, CA 90302

Mar Sorell, CA 90302

Nathaniel Jemison, CA 90303

Cristobal Tostado, CA 90304

Kendall Dennis, CA 90305

Maria Morse, CA 90310

Claudine Gueniot, CA 90401

Brian Sutter, CA 90401

Kathryn Takis, CA 90401

Daniel Arkin, CA 90402

Dave Feldman, CA 90402

Ronni Kern, CA 90402

Frank Stiefel, CA 90402

Jaime Toporovich, CA 90402

Chares Brann, CA 90403

Frederick Carroll, CA 90403

Katie Corridan, CA 90403

Dorothy Froix, CA 90403

Lee Herschler, CA 90403

Sintra Martins, CA 90403

Helen Mccullough, CA 90403

Joe Orcutt, CA 90403

Nectar Redman, CA 90403

Jill Sharaf, CA 90403

Amy Williams, CA 90403

Stefanie Zuroff, CA 90403

Larena Allen, CA 90404

Joan Bee, CA 90404

Ingrid Debeus, CA 90404

Thomas Hawkins, CA 90404

Marlise Malkames, CA 90404

Mary Quinn, CA 90404

Sienna Sanders, CA 90404

Mary Vorasky, CA 90404

Bernard Alfs, CA 90405

Joe Alter, CA 90405

Toby Book, CA 90405

Barry Bunes, CA 90405

Peter Erskine, CA 90405

Linda Garrett, CA 90405

Dan Genetti, CA 90405

Jeffrey Hahn, CA 90405

PAMELA Lane, CA 90405

Erin Martin, CA 90405

Reid Mcglamery, CA 90405

Beverly Millson, CA 90405

Lisa Moseley, CA 90405

Lynn Peterson, CA 90405

Nancy Rosenblum, CA 90405

Mara Thompson, CA 90405

Ashley Wrobel, CA 90405

Tony Wu, CA 90405

Anne Yapple, CA 90405

Chris Hamayas, CA 90501

Mitchell Hicks, CA 90501

Gregory Jacobs, CA 90501

Gail Nowak, CA 90501

Bryant Odega, CA 90501

Gloria Diaz, CA 90502

Rosemary Levenson, CA 90502



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Bobbi Scoville, CA 90502

Michelle Hartman, CA 90503

Judith Baer, CA 90505

Garland Elaina, CA 90505

Elizabeth Leung, CA 90505

Simon Pang, CA 90505

Asma Rasikh, CA 90505

Michael Warner, CA 90505

Bob Lewis, CA 90506

Charlotte Borst, CA 90601

Janine Gonzalez, CA 90601

Robert King, CA 90601

John Melendrez, CA 90602

Delmira Miovsky, CA 90602

Ralph Picon, CA 90602

Thomas Riebs, CA 90602

Jeff Palmer, CA 90603

William Wong, CA 90603

Michael Oppenheim, CA 90604

Frank Samaniego, CA 90604

Andrew Ytuarte, CA 90604

Diane Zaha, CA 90604

Genienne Gastelum, CA 90605

Andrew Nguyen, CA 90605

John Thomas, CA 90605

Catherine Mcfall, CA 90606

Michele Lujan, CA 90620

Lisa Bearbower, CA 90630

Amy Estrada, CA 90630

Hilarie Favro, CA 90630

Christine Handson, CA 90630

Connie Araujo, CA 90631

Louis Estrada, CA 90631

Christina Malm, CA 90631

Alfred Velasco, CA 90631

Sylvia Duran-Katnik, CA 90638

Jorge Moreno, CA 90640

Luis Parocua, CA 90640

Priscilla Tostado, CA 90640

Gloria Haley, CA 90650

Henry Resendez, CA 90650

Madeline Ayala, CA 90660

Irma Barrios, CA 90660

Stacey Esparza, CA 90660

Victoria Rodriguez, CA 90660

Laura Garcia, CA 90670

Katherine Koh, CA 90670

Luisa Acosta, CA 90680

Eloisa Likens, CA 90701

Sherry Barbour, CA 90703

Antonino Castillo, CA 90703

Stephen Hamrick, CA 90703

Patricia Lozano, CA 90703

Linda Rochin, CA 90703

April Goebel, CA 90706

Lee Orozco, CA 90706

Rodrigo Vazquez, CA 90706

Janet Kordich, CA 90710

Lawrence Circosta, CA 90713

Sharney Alvarez, CA 90715



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Frenee Dellosa, CA 90715
Beverly Tolliver, CA 90715
Patricia Hydo, CA 90717
Colin Caesar, CA 90720
Kelly Fleagle, CA 90720
Jay Leibowitz, CA 90720
Jimmy Sorensen, CA 90720
Daniel Teran, CA 90720
Melinda Porter, CA 90723
Josue Garcia, CA 90731
Janet Jackson, CA 90731
Mark Latno, CA 90731
Rosemary Locklear, CA 90731
Kathleen Durazo, CA 90732
Kerry Mcosker, CA 90732
Peggy Morales, CA 90732
Jason Buell, CA 90740
Elda Lowe, CA 90740
Roni Shevick, CA 90740
Rebecca Wyatt, CA 90740
Amanda Herring, CA 90742
Elvia Maciel, CA 90744
Crisostomo Caratao, CA 90745
John Winston, CA 90745
Dionecia Usher, CA 90746
Harold Williams, CA 90746
Sylvia Baker, CA 90755
Donna Vaughan, CA 90755
Jason Castner, CA 90802
Alison Chabot, CA 90802

Lynda Crow, CA 90802
Claus Jurgensen, CA 90802
Matthew Lampe, CA 90802
John Lowe, CA 90802
William Moody, CA 90802
Michael Moskowitz, CA 90802
Nancy Oneill, CA 90802
Gregory Pacificar, CA 90802
Arnold Rosenberg, CA 90802
Timothy Smith, CA 90802
Krista Stoltz, CA 90802
Bonnie Bishop, CA 90803
Lisa Buchanan, CA 90803
Shawn Lamont, CA 90803
Krishna Manvi, CA 90803
Debra Martin, CA 90803
Anne Reggie, CA 90803
Mark Rogers, CA 90803
Michael Werner, CA 90803
Kylee Yates, CA 90803
Vicky Gutierrez, CA 90804
Lena Serrano, CA 90804
Terry Allen, CA 90805
Chris Lauderdale, CA 90805
Trulena Reed, CA 90805
Rose Regalado, CA 90805
Marvin Todd, CA 90805
Brett Banditelli, CA 90806
Sheryl Breault, CA 90806
Linda Gore, CA 90806



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Ian Cross, CA 90807

Robert Hilty, CA 90807

Mary Humme, CA 90807

Loretta Klonecky, CA 90807

Kent Lockart, CA 90807

Sharon McDougal, CA 90807

Robert Miller, CA 90807

Okatch Otieno, CA 90807

Denise Wallace, CA 90807

Louise Cunningham, CA 90808

Richard Kasube, CA 90808

Elizabeth Kurila, CA 90808

Patricia Martinez, CA 90808

Adam Nelson, CA 90808

Michelle Vasiloff, CA 90808

Amy Williford, CA 90808

Becky Wilson, CA 90808

Travis Yarbrough, CA 90808

Samantha Fabrigas, CA 90810

Phoebe Nichols, CA 90810

Alba Carlos, CA 90813

David Navarro, CA 90813

Guillermo Olarte, CA 90813

Sharron Pannell, CA 90813

Jack Dourigan, CA 90814

Robert Loparo, CA 90814

Courtnei Pugh, CA 90814

Jason Suarez, CA 90814

Stella Ursua, CA 90814

Abigail Bradecich, CA 90815

Melanie Buckowski, CA 90815

Chester Chebegia, CA 90815

Sylvia Gyimesi, CA 90815

Rhonda Weisenberger, CA 90815

Bernard Adamczyk, CA 91001

Ontresicia Averette, CA 91001

Patricia Fielder, CA 91001

Sheldon Halpern, CA 91001

Sydney Harris, CA 91001

Kenneth Jones, CA 91001

Elsa Lopez McLeod, CA 91001

Cate MatherS-Suter, CA 91001

Scott Streicher, CA 91001

Susan Lauer, CA 91006

Steven Lee, CA 91006

Joyce Sakai, CA 91006

Albert Hu, CA 91007

Guodi Sun, CA 91007

Diane Coscarelli, CA 91010

David Knapik, CA 91010

Claudia Trefzger, CA 91010

Dave Allen, CA 91011

Joanne Doyle, CA 91011

Tracey Welk, CA 91011

Stephanie Farah, CA 91016

Sandra Glaser, CA 91016

Renee Lindsey, CA 91016

Mary Lutz, CA 91016

Wayne Prasertong, CA 91016

Christine Pregent, CA 91016



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jon Sattler, CA 91016

Rena Snider, CA 91016

Ruben Valenzuela, CA 91016

Kristen Cunningham, CA 91020

Justin Smith, CA 91024

Linda Bortell, CA 91030

Gionne Bozzi, CA 91030

Deirdre Brenner, CA 91030

Kevin Fox, CA 91030

Shandor Garrison, CA 91030

Wes Kennedy, CA 91030

Joseph Loo, CA 91030

Bob Lynch, CA 91030

Stephanie Rodriguez, CA 91030

Robin A, CA 91040

Mary Leask, CA 91040

Stephanie Mines, CA 91041

Cecelia Hall, CA 91042

Suzan Ortmeier, CA 91042

Leonard Hinzo, CA 91101

David Mceliece, CA 91101

Inna Sarac, CA 91101

Jessica Servin, CA 91101

Evelyn Zamora, CA 91101

Garret Gervais, CA 91103

Daniel Denoncourt, CA 91104

Rudy Oclaray, CA 91104

Sherri Solinger, CA 91104

Melissa Afable, CA 91105

Rosemary Distaso, CA 91105

Sable Hodson, CA 91105

Susan Kalmanson, CA 91105

Laila Karme, CA 91105

Jose Marquez, CA 91105

Susan Weber, CA 91105

Thomas Castaneda, CA 91106

Lyle Davis, CA 91106

Courtney Sanford, CA 91106

Patricia Tavera, CA 91106

Richard von Ernst, CA 91106

Daniel Kiczek, CA 91107

Joan Money, CA 91107

Scott Reed, CA 91108

Jordan Sollitto, CA 91108

Patrick Moloughney, CA 91117

Julia Dennett, CA 91118

Phillip Argento, CA 91199

Kathleen Conroy, CA 91201

Michael Lent, CA 91201

Michael Fairman, CA 91202

Eve Hinchcliffe, CA 91202

Oscar Ibardolaza, CA 91202

Mike Powers, CA 91202

JOHN PAUL KARLIAK, CA 91205

Charles Merman, CA 91205

Madoka Minoff, CA 91205

Greg Nash, CA 91205

Yael Torbati, CA 91205

Bonnie Benefield, CA 91206

Barri Brown, CA 91206



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Janna Gosselin, CA 91206
Samuel Jordan, CA 91206
Robin Rose, CA 91206
Johanna Shapiro, CA 91206
Matthew Hancock, CA 91207
Maya Gingery, CA 91208
John Wagner, CA 91208
Vahe Badalian, CA 91214
Elizabeth Connors, CA 91214
Alicia Elliott, CA 91214
Rachel McDowell, CA 91214
Belinda Smith, CA 91214
James Vitek, CA 91214
Warren Wolfswinkel, CA 91214
Bonnie Aharoni, CA 91301
Julie Burkert, CA 91301
Harvey Davis, CA 91301
Helen Dembski, CA 91301
Laura Gilbard, CA 91301
Karen Lijewski, CA 91301
Kellee McDonald, CA 91301
Nicolas Miller, CA 91301
Mary Perezkorinko, CA 91301
Deborah Raymond, CA 91301
Kurt Teutsch, CA 91301
Yaara Berdan, CA 91302
Chittabhattacha Bhattacharya, CA 91302
Kerry Ehrin, CA 91302
James Estill, CA 91302
Marcia Jones, CA 91302

Paul Malmont, CA 91302
Marianne Price, CA 91302
Snuffy Walden, CA 91302
Marissa Espinoza, CA 91303
Bernita Gross, CA 91303
Kristina Hergot, CA 91304
Ernest Hess, CA 91304
Wendy Liebman, CA 91304
Ernesto Lising, CA 91304
Sandra Machado, CA 91304
Lesley Webster, CA 91304
Kirk Bales, CA 91306
Collette Snoonian, CA 91306
Charlesdelore Wilbert, CA 91306
Garrett Clancy, CA 91307
Katherine Eskey, CA 91307
John Golden, CA 91307
Deborah Hyde, CA 91307
Zenia Lasola, CA 91307
Lori Love, CA 91307
Pamela Maggin, CA 91307
Richard Naimy, CA 91307
Philip Sager, CA 91307
Miriam Bogler, CA 91311
Cassandra Kubiak, CA 91311
Lea Oliver, CA 91311
Brian Patridge, CA 91311
Juativa Spurlock, CA 91311
Ann Bose, CA 91316
Cindy Durian, CA 91316



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Kenneth Zunder, CA 91316

Beth Kramer, CA 91320

Eugenio Rodriguez, CA 91320

Albert Sciamann, CA 91320

Cherie Wrigley, CA 91320

Fahim Aladin, CA 91321

Peggy Streid, CA 91321

Barbara Testa, CA 91321

Saul Candi, CA 91324

Rita Silverman, CA 91324

Erin Feaster, CA 91325

Frank Freeman, CA 91325

Cynthia Mendoza, CA 91325

Kelly Moore, CA 91325

Marion Pucci, CA 91325

Sharon Cho, CA 91326

Terrence Fischer, CA 91326

Leslie Ousdahl, CA 91326

Garrett Shorr, CA 91331

Erphan Delgir, CA 91335

Barbara Gershowitz, CA 91335

Daniel Greenbaum, CA 91335

Steven Kent, CA 91335

Betty Ross, CA 91335

Donna Silverman, CA 91335

Alma Melendez, CA 91340

Julia Arroyo, CA 91342

Diana Cabral, CA 91342

Anna Felix, CA 91342

Debra Lizarraga, CA 91342

Judy Courtney, CA 91343

Robin Dickerson, CA 91343

Gustavo Garcia, CA 91343

Robert Jones, CA 91343

Mohammed Manik, CA 91343

Chris Papio, CA 91343

Lewis Gruber, CA 91344

Lisa Jernagan, CA 91344

Margie Ridolfi, CA 91344

Jack Rorke, CA 91344

Debra Stafford, CA 91344

Albert Campbell, CA 91350

Victoria Davis, CA 91350

Richard Davis, CA 91351

Patrick Hayes, CA 91351

Tami Cox, CA 91354

Ellyn Frechette, CA 91354

Laura Lively, CA 91354

Zane Smythe, CA 91354

Monica Bellows, CA 91355

Julie Molinare, CA 91355

Mister Oshodi, CA 91355

Christopher Severance, CA 91355

Sarah Skilton, CA 91355

Linda Swartz, CA 91355

John Trudell, CA 91355

Ladae Bond, CA 91356

Michael Dibenedetto, CA 91356

Tina Glantz, CA 91356

Aaron Katz, CA 91356



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Peter Marafatsos, CA 91356

Eve Newton Gill, CA 91356

Sandra Orleans, CA 91356

Neil Reichline, CA 91356

Manindersethi Sethi, CA 91356

Neil Soltman, CA 91356

Walter Virginia, CA 91357

Arlene Bloom, CA 91360

Josie Borkan, CA 91360

Patricia Bowen, CA 91360

Ronald Clyburn, CA 91360

David Courtland, CA 91360

Karen Giacalone, CA 91360

Manuel Gonzalez-Olmo, CA 91360

Anna Matthews, CA 91360

Michael Pittas, CA 91360

Raquel Robinson, CA 91360

Gary Schattl, CA 91360

Kristin Dark, CA 91361

Lewis Fairley, CA 91361

Suzan Kavusi, CA 91361

Cindy Masci, CA 91361

Marianne Reeves, CA 91361

Andrea Richard, CA 91361

Ravi Sawhney, CA 91361

Suzette Sheweloff, CA 91361

Brigitte Cox, CA 91362

Karen Drees, CA 91362

Cyndi Ex, CA 91362

Debra Gass, CA 91362

Sara Hibbitts, CA 91362

Carl Josefsson, CA 91362

Maxine Raleigh, CA 91362

Paula Varblow, CA 91362

Jill Whitesides, CA 91362

Joey Dianda, CA 91364

John Edelston, CA 91364

Irene Escardo, CA 91364

Ardeshir Farah, CA 91364

Liz Golombek, CA 91364

Jeffrey Pittman, CA 91364

Karen Spencer, CA 91364

Sharla Bridgett, CA 91367

Deborah Cohen, CA 91367

Angela Deluca, CA 91367

Robert Dyck, CA 91367

John Elder, CA 91367

Lisa Insana, CA 91367

Charles Lagola, CA 91367

John Liddy, CA 91367

Christopher Matted, CA 91367

Luz Rockey, CA 91367

Melinda Romeo, CA 91367

Daniel Zagayer, CA 91367

John Billesdon, CA 91377

Margaret Han, CA 91377

Jana Hand, CA 91377

Samantha Hart, CA 91377

Amy Keys, CA 91377

David Robinson, CA 91377



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Miklos Wright, CA 91384

Rose Duarte, CA 91387

Lynn Farwell, CA 91387

Folahan Ogunyankin, CA 91387

Faith Jackson, CA 91394

Christina Anthony, CA 91401

Carolyn Collum, CA 91401

Lauren Dimascio Hilary, CA 91401

Alice Engelmann, CA 91401

Kathy Foley, CA 91401

Tanya Gradet, CA 91401

Jessica Hicks, CA 91401

Jodi Kustanovich, CA 91401

Brenda Miller, CA 91401

Corey Reed, CA 91401

Tami Tirgrath, CA 91401

Kathleen Gooley, CA 91402

Julie Peterson, CA 91402

Carol Baumzweiger, CA 91403

Rene Compean, CA 91403

Pete Decoste, CA 91403

David Frederick, CA 91403

Frances Garcia, CA 91403

Rome Mendheim, CA 91403

Emily Rehm, CA 91403

Nina Berry, CA 91405

Joann Gonzalez, CA 91405

Jeana Mamer, CA 91405

Maria Perez, CA 91405

Mary Pittelli, CA 91405

Brian Saulter, CA 91405

Andrea Tullio, CA 91405

Norma Castro, CA 91406

Melissa Elliott, CA 91406

Richard Follett, CA 91406

James Kimmel, CA 91406

Jean Mensing, CA 91406

Jenny Benjamin, CA 91411

Lilia Espino, CA 91411

Stephanie Hail, CA 91411

Melinda Liberatore, CA 91411

Rhonda Britten, CA 91423

Patrick Fabian, CA 91423

Chiara Gambini, CA 91423

Cheryl Kopitzke, CA 91423

Vicky Leiner, CA 91423

Hannah Lipow, CA 91423

Michael Mccoll, CA 91423

Chandra Padover, CA 91423

Stan Rogow, CA 91423

Sara White, CA 91423

K Andrews, CA 91436

Barbara Bresler, CA 91436

Tracy Danza, CA 91436

Tara Gallogly, CA 91436

Alan Gerson, CA 91436

Jamie Grossman, CA 91436

Hannah Mandel, CA 91436

David Miller, CA 91436

Katrina Parks, CA 91436



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Gia Twine, CA 91436

William Bilton, CA 91501

Peter Carrisoza, CA 91501

Norma Long Smith, CA 91501

Sarah Min, CA 91501

Penny Moore, CA 91501

Barbara Chalsma, CA 91502

Lonnie Schnell, CA 91502

Ellen Burns, CA 91504

Jb Dlugo, CA 91504

Jane Gagle, CA 91504

Gerardo Lorenz, CA 91504

Denise Petski, CA 91504

Lana Wilson, CA 91504

Barbara Bali, CA 91505

Ramona Banuelos, CA 91505

Roberto Ceja, CA 91505

Lydia Delaney, CA 91505

Terry Gwilt, CA 91505

Clayton Holt, CA 91505

Cynthia Mazza, CA 91505

Lynda Morris, CA 91505

Christopher Nicholson, CA 91505

Gloria Rodriguez, CA 91505

Laura Strubing, CA 91505

Carole Tyminski, CA 91505

Peter Wood, CA 91505

Lauren Dean, CA 91506

Lindsey Gary, CA 91506

Joseph Lafalce, CA 91506

Debbie Peterson, CA 91506

Ada Suros, CA 91506

Aaron Berjohn, CA 91601

Carole Meyers, CA 91601

Matthew Murphu, CA 91601

Nicholas Schutz, CA 91601

Greg French, CA 91602

Catherine Genovese, CA 91602

Pamela Hannah, CA 91602

Julie James, CA 91602

David Kemker, CA 91602

Diane Wilson, CA 91602

Jeff Aldrich, CA 91604

Claire Austin, CA 91604

Joshua Bobrowsky, CA 91604

Monica Brown, CA 91604

Sherri Elkaim, CA 91604

Barbara Epstein, CA 91604

Tim Farish, CA 91604

F Forte, CA 91604

Hayley Frazier, CA 91604

Kellie Green, CA 91604

Cynthia Hasday, CA 91604

Alma Hernandez, CA 91604

Masako Ichino, CA 91604

Jeffrey Kaufman, CA 91604

Amy Larkowski, CA 91604

Christine Mantilla, CA 91604

Mary Kay Griepentrog, CA 91605

Anthony Karlic, CA 91605



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Richard Kelley, CA 91605
Myrna Garcia, CA 91606
Janet Hessert, CA 91606
Pattie Tierce, CA 91606
Carl Amodeo, CA 91607
Toby Brody, CA 91607
Chloe Castro, CA 91607
Robert Laskin, CA 91607
Timothy Malcolm, CA 91607
Julie Shemitz, CA 91607
Barbara Singer, CA 91607
Daamen Krall, CA 91610
Alba Boren, CA 91701
Victoria Chestnut, CA 91701
Michelle Dudek, CA 91701
Beverly Pearson, CA 91701
America Rivas, CA 91701
Rose Blanco, CA 91702
Ana Juarez, CA 91702
Lisa Oakes, CA 91702
Jon Sparks, CA 91702
Gregory Vaniman, CA 91702
Linda Bolella, CA 91706
Lisa Cunningham, CA 91709
Luis Nino, CA 91709
Evangeline Obrero, CA 91709
Pamela Pederson, CA 91709
Artan Qerushi, CA 91709
Agnes Ferrer, CA 91710
Kimberly Goodwin, CA 91710

Gregory Lawson, CA 91710
Cathy Mergaert, CA 91710
Naomi Miller, CA 91710
Bernard Karmatz, CA 91711
Daeho Kim, CA 91711
Mary Kraus, CA 91711
Elizabeth Spinrads, CA 91711
Christine Zivelonghi, CA 91711
Michael Bond, CA 91722
Michelle Cozad, CA 91722
Carl Molitor, CA 91722
Joyce Mitchell, CA 91723
Steven Jimenez, CA 91724
Dana Veit, CA 91724
Gilbert Ahumada, CA 91730
Karen Desimone, CA 91730
Edward Hays, CA 91730
Demetria Johnson, CA 91730
Marva Taylor, CA 91730
Phyllis White, CA 91730
David Sandoval, CA 91732
Cherie French, CA 91737
Tammy Wilson, CA 91737
Maria Mendoza, CA 91739
Wanda Peyton, CA 91739
Tedd Johnson, CA 91740
Andy Wang, CA 91740
Fred Beck, CA 91741
Steven Concidine, CA 91741
Kristine Nelson, CA 91741



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Michael Carr, CA 91744
Jacqueline Cellian, CA 91744
Hector Estrada, CA 91744
Enrique Duenas, CA 91745
Irene Loh, CA 91745
Rebecca Meyer, CA 91745
Gabrielanthony Murillo, CA 91745
Mary Rubalcava, CA 91746
Marilyn Bidwell, CA 91750
Dale Gibboney, CA 91750
Bonnie Karlyle, CA 91750
Martha Smith, CA 91750
Kelly Whittington, CA 91750
Warren Winter, CA 91750
Matthew Leal, CA 91752
Alysa Majer, CA 91752
Yip Johnson, CA 91754
Jack Loh, CA 91754
Allan Shatkin, CA 91754
Lucille Dimmick, CA 91761
Mark Iannuzzo, CA 91761
Marcia Sedillo, CA 91761
Jerry Weems, CA 91761
GEORGIANN SLINGERLAND, CA 91762
Graciela Gambino, CA 91763
Wendi Cate, CA 91764
David Taylor, CA 91764
Judith Aguilera, CA 91765
Gary Davis, CA 91765
Varun Dutt, CA 91765

Jean Garcia, CA 91765
Samuel Johnson, CA 91765
Greg Krayser, CA 91765
Hugh Lawrence, CA 91765
Mamie Lindsey, CA 91765
So Pak, CA 91765
Tammi Senzaki, CA 91765
Rosa Lara, CA 91766
Guillermo Monterroso, CA 91766
William Pospishil, CA 91766
Erlene Stevenson, CA 91766
John Valadez, CA 91766
Melissa Crowley, CA 91767
Bryn Pellegrino, CA 91767
Christianne Aurouze, CA 91768
Erlinda Fantauzzi, CA 91770
Jose Meji, CA 91770
Carol Bowe, CA 91773
Remedios Gan, CA 91773
Andrew Ortiz, CA 91773
Nosakhare Oyemade, CA 91773
Renee Taylor, CA 91773
Edward Aguirre, CA 91775
Brooks Atherton, CA 91776
Arlene Rios, CA 91776
Lynn Castro, CA 91780
Agustin Jimenez, CA 91780
Maria Skilbred, CA 91784
Jaymi Abusham, CA 91786
Socorro Garcia, CA 91786



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jeff McCall, CA 91786

Marco Ramirez, CA 91786

Ed Clemensen, CA 91789

Vilma Takamine, CA 91789

Carol Tang, CA 91789

Gregory Newcomer, CA 91790

Mary Silverstein, CA 91791

Jeanne Ambriz, CA 91792

Ariadna Arambula, CA 91801

Daniella Cota, CA 91801

Richard Spindler, CA 91801

Erika Kao, CA 91802

Lothar Imbier, CA 91803

Tiffany Wardloveland, CA 91803

Eduardo Becerra, CA 91902

Richard Hanks, CA 91902

France Williams, CA 91902

Soledad Boucree, CA 91910

Osadolor Godwin, CA 91910

Blanca Lopez, CA 91910

Jose Puente, CA 91910

Elizabeth Verastigue, CA 91910

Debra Ashley, CA 91911

Maurice Gray, CA 91911

Alan Palmer, CA 91911

Wendy Shurelds, CA 91911

Keith Hammond, CA 91913

Seoul Holloway, CA 91913

Hung Nguyen, CA 91913

Vilma Clariza, CA 91915

Fernando Delgado, CA 91915

George Hurt, CA 91915

Linda Petty, CA 91915

Kimberly Williams Kee, CA 91915

Kevin Collier, CA 91935

Fred Gordon, CA 91941

Bebi Rosa, CA 91941

John Barrios, CA 91942

Mary Fay, CA 91942

Mark Forte, CA 91942

Chelsea Halpine Berger, CA 91942

Susan Kavar, CA 91942

Mimi Lev, CA 91942

Barbara Lueder, CA 91942

Marjorie McLaughlin, CA 91942

Susan Mullaney, CA 91942

Patricia Cortez, CA 91945

Matt Niles, CA 91945

Caitlin Wion, CA 91945

Josefina Alvarado, CA 91950

Patricia Salazar, CA 91950

David Valladolid, CA 91950

Angello Carlin, CA 91977

Jason Heil, CA 91977

Carrie Lopez, CA 91977

Karen Simpson, CA 91977

Delores Threatt, CA 91977

Cheryl Carr, CA 91978

Shawn Hanna, CA 92007

Alana Howell, CA 92007



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Laurel Howard, CA 92008

Megan Rounds, CA 92008

William Betts, CA 92009

Linda Brenner, CA 92009

Rene Brunold, CA 92009

Megan Dewitt, CA 92009

Christine Dicken, CA 92009

Amal Ghazi, CA 92009

Tiffany Karnig, CA 92009

Judith King, CA 92009

Phillip Nguyen, CA 92009

Gina Pisello, CA 92009

Faramarz Rassouli, CA 92009

Jacqui Schneider, CA 92009

John Detreville, CA 92010

Veronica Glaser, CA 92010

Linda Vancea, CA 92010

Elizabeth Hamelin, CA 92011

Brenna Hardman, CA 92011

Cheryl Bianchi, CA 92014

Samuel Engel, CA 92014

John Erick, CA 92014

Janet Harris, CA 92014

Kay Hoeprich, CA 92014

Candace Lowry, CA 92014

Deanna Lucci, CA 92014

Rand Steiger, CA 92014

Marie Teehan, CA 92014

Kyle Williams, CA 92014

Robert Brandenburg, CA 92019

Tracy Clingan, CA 92019

Veronica Atilano, CA 92020

Dvora Fajerman, CA 92020

Frank Ferrone, CA 92020

Janet Kaiser, CA 92020

Edward Matus, CA 92021

Joan Monkman, CA 92021

Woody Wilson, CA 92021

Cynthia Clark, CA 92023

Misty Andersen, CA 92024

Caroline Augustine, CA 92024

Stephen Baldini, CA 92024

Michele Haber, CA 92024

Richard Hauger, CA 92024

Ann Irwin, CA 92024

Anand Janaswamy, CA 92024

Maureen Kowba, CA 92024

Sarah Mason, CA 92024

Laura Metzinger, CA 92024

Meaghan Oleary, CA 92024

Mark Sonnenshein, CA 92024

Karen Sulger, CA 92024

Ellen Trester, CA 92024

Susan Giroux, CA 92025

Timothy Jarrett, CA 92025

Carmen Ivins, CA 92026

Kimberly Marin, CA 92026

Julie Choi, CA 92027

Mitchell Green, CA 92027

George Kliassov, CA 92027



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Konstantin Sheverdyayev, CA 92027

Susan Beld, CA 92028

Patricia Eastman, CA 92028

Ernest Holburt, CA 92028

Richard Mannino, CA 92028

Diane Parker, CA 92028

Samuel Pietrofeso, CA 92028

Kenneth Samuels, CA 92028

Tom Simmons, CA 92028

Richard Beck, CA 92029

Thomas Hearn, CA 92029

Robert Knaier, CA 92029

Neal Henderson, CA 92030

Robert Blanchard, CA 92037

Barry Bloom, CA 92037

Elizabeth Boyer, CA 92037

Isabel Brown, CA 92037

Brian Campion, CA 92037

Gary Ferdman, CA 92037

Michelle Lerach, CA 92037

Megan Phelps, CA 92037

Oliver Polo, CA 92037

David Thompson, CA 92037

Christopher Jrfisher, CA 92038

Kirk Sword, CA 92040

Barbara Thompson, CA 92040

William Crawford, CA 92049

Thomas Gougherty, CA 92049

John Collins, CA 92052

Carolyn Boone, CA 92054

Susan Buckland, CA 92054

Joseph Calvino, CA 92054

Jason Edwards, CA 92054

John Engel, CA 92054

Patricia Hopper, CA 92054

Christopher Martin, CA 92054

Mark Minkler, CA 92054

Luke Tesluk, CA 92054

Rita Atkinson, CA 92056

William Boston, CA 92056

Rudy Carino, CA 92056

Thomas Labrot, CA 92056

Edward Mankowski, CA 92056

Julie Scott, CA 92056

Natalie Byler, CA 92057

Michael Caracappa, CA 92057

Mark Gillen, CA 92057

Eva Gonzalez, CA 92057

Frank Jacobs, CA 92057

Kelly Kissinger, CA 92057

Laurie Lister, CA 92057

Suzanne Schaefer, CA 92057

Michael Schwalbe, CA 92057

Beverly Stiles, CA 92057

Charlotte Turner, CA 92057

Victoria Volmer, CA 92057

Anna Hamrick, CA 92058

Adrienne Marraccini, CA 92058

Michele Engel, CA 92064

Tom Fahrnkopf, CA 92064



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Belinda Haire, CA 92064

Sharon Hanson, CA 92064

Pamela Keyser, CA 92064

Christopher Nielsen, CA 92064

Maria Stravelakis, CA 92064

Deborah Supergan, CA 92064

April West, CA 92064

Andrea Whitehill, CA 92064

Connie Bley, CA 92065

Eileen Coppola, CA 92065

Paul Firth, CA 92065

Sandra Smith, CA 92065

Michael Gelfand, CA 92067

Nannette Davis, CA 92069

Mary Houle, CA 92069

Howard Motyl, CA 92069

Christina Baumgardner, CA 92071

Darlene Jenkins, CA 92071

Hugo Lepur, CA 92071

Phillip Panuco, CA 92071

Viki Wong, CA 92071

Cathryn Bolt, CA 92075

Jean-Louis Saillet, CA 92075

Tauna Andreoli, CA 92078

Melanie Bennetts, CA 92078

Susan Bowers, CA 92078

Jessica Lynn, CA 92079

Alex Alavi, CA 92081

Annette Berg, CA 92081

Peter Boutte, CA 92081

Bonita Lang, CA 92081

Matilda McLaughlin, CA 92081

Michael Santucci, CA 92081

Rosemarie Bilandzija, CA 92082

Marcia Francis, CA 92083

Brenda Squires, CA 92083

Karen Eso, CA 92084

Marilyn Falsetti, CA 92084

Anne Ichord, CA 92084

Peter Jones, CA 92084

Shelley Markoscrivner, CA 92084

Julianne Howell, CA 92093

Steve Altman, CA 92101

Melissa Blackburn Joniaux, CA 92101

Christina Cole, CA 92101

Joe Cordileone, CA 92101

Drew Dunk, CA 92101

Joshua Gruenberg, CA 92101

Chana Grunvald, CA 92101

Ann Hart, CA 92101

Brad Herrin, CA 92101

Bruce Jaques, CA 92101

Jeff Jordan, CA 92101

Joshua Kuehler, CA 92101

Gregory Lockyer, CA 92101

Charley Myers, CA 92101

Henry Rosen, CA 92101

Jon Ruelle, CA 92101

Julie Smith, CA 92101

Kaylan Thornhill, CA 92101



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Keith Vandellen, CA 92101

Kelly Vandenheuvel, CA 92101

Leonard Flagg, CA 92102

Christian Bulcao, CA 92103

Elise Curry, CA 92103

Bradley Foltz, CA 92103

Wayne Maxwell, CA 92103

Mary Padial, CA 92103

Jack Ray, CA 92103

Richard Thill, CA 92103

Judybeth Tropp, CA 92103

Viridiana Ayala, CA 92104

Sandrs Chambers, CA 92104

Amber Ferguson, CA 92104

Derek Floyd, CA 92104

Emily Greeno, CA 92104

Susan Groves, CA 92104

Janine Harty, CA 92104

Albert Orcino, CA 92104

Nancy Relaford, CA 92104

Robert Silbaugh, CA 92104

Todd Simpson, CA 92104

Michelle Sullivan, CA 92104

Lynne Graham, CA 92105

Eric Green, CA 92105

Margarita Jimenez, CA 92105

Christopher Rocha, CA 92105

Jennifer Boyd Mims, CA 92106

Kirsten Chrisman, CA 92106

Luther Lewis, CA 92106

John Silva, CA 92106

Tasha White, CA 92106

Cindy English, CA 92107

Alison Gang, CA 92107

Daniel Garcia, CA 92107

Zac Garripoli, CA 92107

Shanann Klaver, CA 92107

Amber Rabon, CA 92107

Jaime Bartholomew, CA 92108

Edward Billard, CA 92108

Sharon Brown, CA 92108

Helios Gonzalez, CA 92108

Lynn Jarman, CA 92108

Kim Myers, CA 92108

George Salcedo, CA 92108

Alejandra Bobadilla, CA 92109

Thomas Cooper, CA 92109

Hillary Cowan, CA 92109

Mary Oreilly, CA 92109

Rogelio Quesada, CA 92109

Arlina Whetstone, CA 92109

Joseph Atkinson, CA 92110

John Goodwin, CA 92110

Jennifer Latta, CA 92110

Jason Raymond, CA 92110

John Seymour, CA 92110

Barbara Thomas, CA 92110

Janis Cadwallader, CA 92111

John Comes, CA 92111

Carolyn Floyd, CA 92111



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Debra Frischer, CA 92111

Virginia Holcomb, CA 92111

Yael Kosta, CA 92111

Ana Saucedo, CA 92111

Yolanda Peraza, CA 92113

Yolandra Thrash, CA 92113

REBECCA CORREA, CA 92114

Vivian Griffin, CA 92114

Kelly Wallace, CA 92114

Forest Fischer, CA 92115

Kelly Gavin, CA 92115

Holly Hamilton, CA 92115

Jerry Mackenzie, CA 92115

Robert Snider, CA 92115

Drew Gingrich, CA 92116

Robert Hauer, CA 92116

Paul Hemmerling, CA 92116

Pfeiffer Ledjema, CA 92116

Herbert Schwab, CA 92116

Janeth Alvarez, CA 92117

Gisela Baranda, CA 92117

John Brady, CA 92117

Tim Caulder, CA 92117

David Fisher, CA 92117

Barbara Rolando, CA 92117

Greg Wong, CA 92117

Anneilynn Wright, CA 92117

Kevin Ashley, CA 92118

Shane Chase, CA 92118

Patti Flanagan, CA 92118

Ann Posthill, CA 92119

Evangelina Woo, CA 92119

Christopher Hall, CA 92120

Kristina Isberg, CA 92120

Kristin Anderson, CA 92121

Michael Buckley, CA 92121

John Ginn, CA 92121

Kim Bolivar, CA 92122

Anne Brinkman, CA 92122

Christine Esau, CA 92122

Paula Fitzgerald, CA 92122

Nancy Kern, CA 92122

Brandon Messerly, CA 92122

Marie Minnick, CA 92122

Rosemary Straley, CA 92122

Andrew Utley, CA 92122

Dina Beebe, CA 92123

Loretta Lowery, CA 92123

Martha Romero, CA 92123

Arash Yarpezhkan, CA 92123

Glenn Buberl, CA 92124

Anne Nohelty, CA 92124

Margarita Badaraco, CA 92126

Jennifer Betancourt, CA 92126

Melissa Fraser, CA 92126

Alfredo Iglesias, CA 92126

Ann Rael, CA 92126

Shawn Romero, CA 92126

Debra Sigal, CA 92126

Charles Smith, CA 92126



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Brenda Johnson, CA 92127

Kathleen Nahman, CA 92127

Nora Nido, CA 92127

Leslie Taylor, CA 92127

Anthony Franchino, CA 92128

Pat Lampasso, CA 92128

Mark Stutzman, CA 92128

Manisha Varaiya, CA 92128

Jacob Wheatley, CA 92128

Cynthia Fehrenbach, CA 92129

Nathalie Gill Podgorski, CA 92129

Katherine Holvoet, CA 92129

Taylor Israel, CA 92129

Courtney Kaull, CA 92129

Lindsay Moon, CA 92129

Debra Sammon, CA 92129

Sue Berard, CA 92130

Donna Durlak, CA 92130

Betty Garbutt, CA 92130

Genevieve Goldstone, CA 92130

Michael Hartogs, CA 92130

Charles Holland, CA 92130

Mario Petrocco, CA 92130

Deborah Wheeler, CA 92130

Matthew Hetrick, CA 92131

Ethan Marcus, CA 92131

Edlene McKenzie, CA 92131

James Mullen, CA 92131

Robert Shull, CA 92131

Mayra Arellano, CA 92154

Valerie Haas, CA 92154

Kimberly Morgan, CA 92154

Andrea Stella, CA 92154

Larosa Watson, CA 92154

Carolyn Hollins, CA 92160

Susan Blum, CA 92166

Alex Munguia, CA 92193

Maria Eustice, CA 92201

Linda Harris, CA 92201

Patrick Knox, CA 92201

Jacqueline Lopez, CA 92201

Rhona Bader, CA 92203

Lori Dermer, CA 92203

Kathleen Murray, CA 92203

Francis Fashing, CA 92211

Norene Fremont-Bloom, CA 92211

Cheryl Matthews-Fullerton, CA 92211

Donna Mccloudy, CA 92211

Pam Parker, CA 92211

Frederick Schmidt, CA 92211

Earle Wolfe, CA 92211

Cheryl Hopkins, CA 92220

Lyn Johnson, CA 92220

Misty Lane, CA 92220

William Mccloud, CA 92220

Susan Bonner, CA 92223

Loui Cronholm, CA 92223

Anita Finkelstein, CA 92223

Janet Reed, CA 92223

Lori Robillard, CA 92223



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Sylvia Diego, CA 92227
Chryssa Brazil, CA 92234
Heidi Holmes, CA 92234
Edith Lascola, CA 92234
Dale Meyer, CA 92234
Donald Moore, CA 92234
Scott Randall, CA 92234
Victor Rodriguez, CA 92234
Sydney Skosana, CA 92234
Kent Taylor, CA 92234
Sarah Vazquez, CA 92234
Lilian Velasquez, CA 92234
George Williamson, CA 92234
Zee Wong, CA 92234
Linda Bjornberg, CA 92240
Ronald Scheer, CA 92240
Victoria Escalante, CA 92243
Akbar Zadeh, CA 92243
Sandy Villa, CA 92251
Mary Hitchcock, CA 92252
Linda Perry, CA 92252
Thomas Burbank, CA 92253
Jackie Grenz, CA 92253
Emmett Lewis, CA 92253
Walter Nelson, CA 92253
Sharon Prentice, CA 92253
Jim Watson, CA 92253
Nancy Woodruff, CA 92253
Mark Chappell, CA 92256
Jayne Combs, CA 92256

Michael Foster, CA 92256
Gregory Bauer, CA 92260
Sharon Beckman, CA 92260
Frances Ferguson, CA 92260
Shirley Findlay, CA 92260
Genevieve Judge, CA 92260
Barbara Marx, CA 92260
Robert Nowie, CA 92260
Ilene Schimmel, CA 92260
Kimberly Valentine, CA 92260
Myriam Westendorf, CA 92260
Steven Bean, CA 92262
Clayton Blackburn, CA 92262
Robert Brandt, CA 92262
Justin Ceeko, CA 92262
Martin Foster, CA 92262
Brandon Hoskins, CA 92262
Brian Ingelson, CA 92262
John Mahoney, CA 92262
John Meyer, CA 92262
Victor Pellegrini, CA 92262
Vonne Ringle, CA 92262
Julian Smariga, CA 92262
David Wallace, CA 92262
Richard Witzel, CA 92262
Sally Goodman, CA 92263
Rosemarie Olecki, CA 92263
Jane Stampe, CA 92263
Deanne Anders, CA 92264
William Bodine, CA 92264



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Mary Humfeld, CA 92264

Patricia Martin, CA 92264

Kathleen Mcelvargarrity, CA 92264

Philip Sacino, CA 92264

Mark Steffen, CA 92264

Leland Vandeventer, CA 92264

Abby Winston, CA 92264

Paul Addison, CA 92270

Shirelle Alexander, CA 92270

Judith Ankney, CA 92270

Bruce Flamenbaum, CA 92270

David Lacharite, CA 92270

Annamarie Viglizzo, CA 92270

Barbara Wiesen, CA 92270

Beth Windsor, CA 92270

Judy Wright, CA 92270

Susan Trexler, CA 92274

Lisa Ayres, CA 92276

Robert Hofmann, CA 92277

James Knight, CA 92277

Vanessa Souza, CA 92277

Laura Valentine, CA 92277

David Woods, CA 92277

Jace Ribblett, CA 92284

Ned Porter, CA 92308

Karen Proctor, CA 92313

Cindy Lalonde, CA 92315

Annette Johnson, CA 92316

Patricia Cuesta, CA 92317

Loretta Airaghi, CA 92321

Kofi Donkor, CA 92324

Megan Mescher, CA 92324

Kenneth Vandusen, CA 92325

Elsa Murdoch, CA 92333

Sunshyne Leyba, CA 92336

Franci Taylor, CA 92337

Margo Alexander, CA 92342

Holly Miller, CA 92345

Adriene Moore, CA 92345

Catherine Smith, CA 92345

Shelley Valadez, CA 92345

Nicholas Warino, CA 92345

Lynette Adelson, CA 92346

Barbara Leelhasuwan, CA 92346

Michela Ratto, CA 92346

Dean Sundquist, CA 92346

James Ferranti, CA 92352

David Bee, CA 92354

Richard Guth, CA 92354

Rivera Nivar, CA 92359

David Leonard, CA 92363

Urvashi Barua, CA 92373

Judith Whitehouse, CA 92373

Chris Clautice, CA 92374

Yolanda Garnicahickey, CA 92374

Keith Moore, CA 92374

Randy Morris, CA 92374

Alex Zhigimont, CA 92374

Toni Formby, CA 92376

Stephanie Gleason, CA 92376



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Adeline Rosales, CA 92376

Cheryl Pirihi, CA 92378

Rosalie Redmile, CA 92382

Sarah Hatchell, CA 92386

Connie Harris, CA 92392

Juanita Murray, CA 92392

Linda Neumaier, CA 92392

Michael Oliver, CA 92392

Eddie Smith, CA 92392

Lydia Burks, CA 92394

Roberto Cardenas, CA 92394

Evelia Gomez, CA 92394

Lee Arvinger, CA 92395

Ariene Bennett, CA 92395

Marsha Owens, CA 92395

Sharon Dougherty, CA 92397

Kathryn Boatman, CA 92399

Gay Hardy, CA 92399

Heather Longyear, CA 92399

Helen Reynaud, CA 92399

Severiana Jordan, CA 92404

Susan Fleming, CA 92501

Dianne Hughes, CA 92501

Shavon Shegog, CA 92501

Gabriel Flores, CA 92503

Sandra Neal, CA 92503

Kathy Sutherland, CA 92503

Paula Allbeck, CA 92504

Melissa Banda, CA 92504

Jason Hackman, CA 92504

Ladanta Heriman, CA 92504

Martin Martinez, CA 92504

Tiffany Farr, CA 92505

Juanita McKenzie, CA 92505

Kathy Mcneilly, CA 92505

Kimberly Romero, CA 92505

Jonathan Green, CA 92506

Debra Rivera, CA 92506

Robin Sinkhorn, CA 92506

Stephanie Stolzenberg, CA 92506

Glenn Williams, CA 92506

Michael Esparza, CA 92507

Nora Moti, CA 92507

Natalie Ralston, CA 92507

Emma Wilson, CA 92507

Shihui Yang, CA 92507

Ruth Lumsdon, CA 92508

Ellen Schaub, CA 92508

Suzanne Ramirez, CA 92509

Lorena Torres, CA 92509

Marty Torres, CA 92509

Jayson Sandoval, CA 92517

Ana Cotton, CA 92521

George Rolla, CA 92530

Linda Taylor, CA 92530

Au Ngo, CA 92532

Richard Provencio, CA 92532

Sylvia Ross, CA 92532

Debra Person, CA 92543

Margaret Marsden, CA 92544



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Anthony Moya, CA 92544

Lisa Ostrow, CA 92544

Mark Branyon, CA 92548

Charles Meece, CA 92549

Paul Martin, CA 92553

Lilia Salais, CA 92553

Monica Woodward, CA 92553

Timothy Cobos, CA 92555

Carola Fabiola Galvez, CA 92555

David Hyde, CA 92557

Renee Osburn, CA 92557

Carlos Morfin, CA 92561

Shawn Hug, CA 92562

Jan Principe, CA 92562

Marsha Burkhalter, CA 92563

Chanstay Corlew, CA 92563

Robert Decubellis, CA 92563

Dorothy Gerard, CA 92563

Wilbur Miller, CA 92563

Paul Smith, CA 92563

Billie Kelpin, CA 92567

Linda Adams, CA 92570

Johnny James, CA 92570

Valerie Jones, CA 92570

Fred Pedregon, CA 92570

Robert Gyngard, CA 92582

Angela Johnson, CA 92582

Chris Amestoy, CA 92584

Karen Marshall, CA 92584

Dolore Scorzo, CA 92584

Charlotte Shifflet, CA 92584

Laurie Stuart, CA 92585

Debra Hall, CA 92586

Carol Luevano, CA 92586

Sheila Monaghandavis, CA 92586

Shari Palmer, CA 92586

Veronica Poss, CA 92586

Eileen Snow, CA 92586

Linda Sproul, CA 92587

John Pozza, CA 92590

Michael Vantrojen, CA 92590

Patsy Calderon, CA 92591

Marcos Camacho, CA 92591

Dolores Esparza, CA 92591

Peggy Hagberg, CA 92591

Josie Madrid, CA 92591

Charyl Malanaphy, CA 92591

Bethany Rogers, CA 92591

Judi Thompson, CA 92591

Robert Audibert, CA 92592

Angelo Lingos, CA 92592

Michael Maginski, CA 92592

Dina Meir, CA 92592

Paul Randall, CA 92592

Danielle Shirley, CA 92592

Mary Vann, CA 92592

Robbin Abeer, CA 92595

Gene Aurand, CA 92596

Kathleen Marquez, CA 92596

Richard Alegre, CA 92602



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Susan Byrne, CA 92602
Sarah Millerberg, CA 92602
Neda Moayedi, CA 92602
Phaeryn Sheehan, CA 92602
Tom Wiedemann, CA 92602
Youmin Zhao, CA 92602
Earl Biven, CA 92603
Paniz Ebrahimi, CA 92603
Debi Lambert, CA 92603
Jenny Lamott, CA 92603
Peggy Meadows, CA 92604
Gwen Oden, CA 92604
Justin Stone, CA 92604
Solaimani Ferri, CA 92606
Susan Leinberger, CA 92606
Douglas Mason, CA 92606
Patricia Messerly, CA 92606
Christine Penning, CA 92606
Nicole Kroesen, CA 92610
Kristen Allison, CA 92612
Karen Barnett, CA 92612
Paul Kiburis, CA 92612
Christina Krause, CA 92612
Frank McGill, CA 92612
Lynnann Williamson, CA 92612
Nira Brand, CA 92614
Maria Centeno, CA 92614
Raeleen Endo-Russell, CA 92614
Lin Hong, CA 92614
Tikiri Karunasundera, CA 92614

Steve Murow, CA 92614
Lori Wallace, CA 92614
Kathy White, CA 92614
Adriana Briscoe, CA 92617
Joanne Donovan, CA 92617
Tira Palmquist, CA 92617
Courtney Costello, CA 92618
Serap Frautschy, CA 92618
Jeffrey Reznic, CA 92618
Behraam Baqai, CA 92620
Michael Cobin, CA 92620
Adrienne Escoe, CA 92620
David Kapsner, CA 92620
Rieva Lesonsky, CA 92620
Mili Mehta, CA 92620
Clare Greene, CA 92624
Daniel Gil, CA 92625
Joanne Hunt, CA 92625
Patricia McCormick, CA 92625
Bill Schenker, CA 92625
Ruth Silver, CA 92625
Tamar Wilson, CA 92625
Robert Getter, CA 92626
cristina mayer, CA 92626
Philip McGovern, CA 92626
Conor Sontag, CA 92626
Larry Weinheimer, CA 92626
Crystal Willis, CA 92626
Gerardo Ambriz, CA 92627
Steven Behrens, CA 92627



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Susan Forbath, CA 92627

Stephen Hennessey, CA 92627

Tracie Hoffman, CA 92627

Damian Perry, CA 92627

Laura Ricke, CA 92627

James Thomas, CA 92627

Donna Tranter, CA 92627

Axel Truwill, CA 92627

Janice Turner, CA 92627

Marie Wencel, CA 92627

Sherri Eaton, CA 92629

Jeff Fleming, CA 92629

Lisa Kopelman, CA 92629

John Kucera, CA 92629

Lisa Mckee, CA 92629

Richard Moran, CA 92629

Monte Yoder, CA 92629

Gretchen Adin, CA 92630

Linda Burkholder, CA 92630

Jose Cuevas, CA 92630

Michele Dinneen, CA 92630

irving engel, CA 92630

John Flora-Tostado, CA 92630

Elaine Froome, CA 92630

Connie Martin, CA 92630

Shaiko Mukurazhizha, CA 92630

Dejbakhsh Nader, CA 92630

Mary Brogdon, CA 92637

Debra David, CA 92637

Marilyn Giss, CA 92637

Ramesh Joshi, CA 92637

Anne Llewellyn, CA 92637

Debbie Lowe, CA 92637

Delilah Manary, CA 92637

Joseph Meyer, CA 92637

Barbara Sprayregen, CA 92637

Patricia Boyle, CA 92646

John Briody, CA 92646

Carol M. Correia, R.N., M.S., CA 92646

Mona Cortez, CA 92646

Kelly Elder, CA 92646

Ronald Gould, CA 92646

Steve Graham, CA 92646

Gabrielle Hass, CA 92646

Jennifer Jahnke, CA 92646

Sally Kanarek, CA 92646

suzanne lockhart, CA 92646

Maria Mastropaolo, CA 92646

Ginette Nourse, CA 92646

MOKHTAR SHAWKY, CA 92646

Kathy Wanchek, CA 92646

Lisa Welcher, CA 92646

Joseph Harris, CA 92647

Patrick Kennedy, CA 92647

David Kurien, CA 92647

Becky Roepke, CA 92647

Rosemary Rosales, CA 92647

Thomas Cammann, CA 92648

Kristine Cerone, CA 92648

Carole Fulford, CA 92648



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Eleanor Gruenebaum, CA 92648

Amy Hanson, CA 92648

Karen Kettler, CA 92648

Shelley Lowrey, CA 92648

Lisa Martinez, CA 92648

Timothy Murphy, CA 92648

Priscilla Taylor, CA 92648

Cheri Atkinson, CA 92649

Sarah Gibson, CA 92649

Tam Glunt, CA 92649

Randall Keeth, CA 92649

Rick Orr, CA 92649

Sarah Pirch, CA 92649

Rick Shearer, CA 92649

Tom Stanton, CA 92649

Sandra Hartness, CA 92651

Jolie Jensen, CA 92651

Glenna Lovett, CA 92651

Elsa Mitani, CA 92651

George Ripley, CA 92651

Alexander Rounaghi, CA 92651

Wendy Tenebaum, CA 92651

Lauren Dibias, CA 92653

Valerie Estrada, CA 92653

Ivo Gough Eschrich, CA 92653

Courtney Kim, CA 92653

Bertha Torres, CA 92653

Socorro Alvarez, CA 92655

Quy Bao, CA 92655

Martha Ramirez, CA 92655

Lorie Cohen, CA 92656

Anne Dalluge, CA 92656

Melissa Deveikis, CA 92656

Rachel Felix, CA 92656

Dru Kaplan, CA 92656

Elizabeth McGrath, CA 92656

Maria Perez, CA 92656

Todd Schoedel, CA 92656

Kevin Steele, CA 92656

Linda Westlake, CA 92656

Lawrence Kugelman, CA 92657

Eugene Spiritus, CA 92657

Kevin Vuchinich, CA 92657

Toni Antonacci, CA 92660

Goli Aydin, CA 92660

John Dickinson, CA 92660

Lauren Henry, CA 92660

Robert Herbst, CA 92660

Jan Luymes, CA 92660

Yolanda Mendiveles, CA 92660

Peggy Pugh, CA 92660

Robert Hampton, CA 92661

Cheryl Freeman, CA 92663

Gina Gunal, CA 92663

Bonnie Jeannette, CA 92663

William Kirwin, CA 92663

Holly Thibodeaux, CA 92663

Mike Willison, CA 92663

Sherry Price, CA 92672

Theresa Recht, CA 92672



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Leongah Wheeler, CA 92672

Barbara Bernal, CA 92673

Amanda Einhorn, CA 92673

James Guilfoil, CA 92673

Anthony Hewes, CA 92673

Ronald Koby, CA 92673

Jessica Labbe, CA 92673

Janet Leger, CA 92673

Andrew Lichty, CA 92673

John Mairs, CA 92673

Steven Bellomo, CA 92675

Kirsten Mickelson, CA 92675

Mark Perez, CA 92675

Mark Rodrigues, CA 92675

Nicole Herold, CA 92676

Rhonda Baron, CA 92677

James Birdsall, CA 92677

Rosalind Chasman, CA 92677

Ellen Eber, CA 92677

Jacob Faigin, CA 92677

Thomas Fitch, CA 92677

Tina Freeland, CA 92677

Lara Horgan, CA 92677

Bahman Joorabchi, CA 92677

Gary Olson, CA 92677

Nader Peikar, CA 92677

Anne Perry, CA 92677

Jeanine Roche, CA 92677

Sadia Siddiqui, CA 92677

David White, CA 92677

Greg Young, CA 92677

Vicki Iacono, CA 92678

Marian Ballog, CA 92679

Peggy Calcagnie, CA 92679

Colleen Daniel, CA 92679

Jeffrey Dreyer, CA 92679

Michelle Graham, CA 92679

Stacy Hagen, CA 92679

Josefina Azcona, CA 92683

Regina Christ, CA 92683

Peter Haaker, CA 92683

John Parry, CA 92683

Viet Pham, CA 92683

Gina Thompson, CA 92683

Catherine Besselmanhuebscher, CA 92688

Robert Dorman, CA 92688

Purya Ghrabeti, CA 92688

Jennifer Jenrette, CA 92688

Erik Sandstrom, CA 92688

Phillip Woodham, CA 92688

Dorothy Andrews, CA 92691

Carolyn Cohn-Morros, CA 92691

Wesley Jung, CA 92691

Patrick Knotts, CA 92691

Priscilla Monroe, CA 92691

John Mooney, CA 92691

Amy Moore, CA 92691

Michael Sappingfield, CA 92691

Paul Swanson, CA 92691

Jolanta Woog, CA 92691



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Elizabeth Aronson, CA 92692

Dixie Auringer, CA 92692

Sher Azizi, CA 92692

Kenneth Ballan, CA 92692

Cheryl Boyett, CA 92692

Jack Brumfield, CA 92692

Joy Chart, CA 92692

Hamid Fadavi, CA 92692

Mary Glackin, CA 92692

Robert Gonter, CA 92692

Rita Knisely, CA 92692

Diane Nixon, CA 92692

Annette Ohuche, CA 92692

Pamela Perry, CA 92692

James Tam, CA 92692

Mark Delaurence, CA 92694

Susan Knapp, CA 92694

Greg Prouty, CA 92694

Jamie Browning, CA 92698

Jesus Adorno, CA 92701

Eliza Martinez, CA 92701

Simone Ponce, CA 92701

Robert Unetic, CA 92701

Manuel Villalba, CA 92703

Angel Cardoza, CA 92704

Veronica Lopez, CA 92704

Karen Allen, CA 92705

Florence Bishop, CA 92705

Robert Bowman, CA 92705

Christe Bruderlin-Nelso, CA 92705

Kathleen Calder, CA 92705

Santos Cortez, CA 92705

Louise Davy, CA 92705

Deborah Dean, CA 92705

Paula Gelman, CA 92705

Lydia Levin, CA 92705

Cherie Phipps, CA 92705

Maggie Ryan, CA 92705

Trisha Shipcott, CA 92705

Linda Warde, CA 92705

Laura Atkinson, CA 92706

Quan Dinh, CA 92706

Paula Gates, CA 92706

Natalie Rankin, CA 92706

Donna Drizin, CA 92707

Leanne Carter, CA 92708

Gayle Fenton, CA 92708

Heidi Nguyen, CA 92708

Eileen Powell, CA 92708

Gabriel Talavera, CA 92708

Lee Fink, CA 92780

Amy Greyson, CA 92780

Doris Kollias, CA 92780

Hillary Streichenberger, CA 92780

Gordon Thomson, CA 92780

Virginia Tibbetts, CA 92780

Patricia Schuck, CA 92781

Gonzalo Ferro, CA 92782

Ronald Imus, CA 92782

Susan Keefe, CA 92782



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Quang Wong, CA 92782
Brian Dang, CA 92801
Mary Delgado, CA 92801
Schwanda Grant, CA 92801
Jolynn Ibanez, CA 92801
Farhana Rawnaq, CA 92804
Doug Benoit, CA 92805
Stephanie Butler, CA 92805
David Cartwright, CA 92806
C Ford, CA 92806
Mario Gerace, CA 92807
Kimberly Leshin, CA 92807
Debra Martin, CA 92807
K McDon, CA 92807
Barry Staymates, CA 92807
Lonnie Hahn, CA 92808
Carole Tamme, CA 92808
Linda Vanwormer, CA 92808
Penny Bowman-Mcwright, CA 92821
Bruce Laclair, CA 92821
Shannon Morisako, CA 92821
Lauren Perkins, CA 92821
Joyce Wills, CA 92821
Peter Lin, CA 92823
William Lackey, CA 92825
Maria Garcia, CA 92831
Joanna Johnson, CA 92831
Sandra Park, CA 92831
Leo Song, CA 92831
Kenny Tokusato, CA 92831

Bryan Barboz, CA 92832
Julie Dufau, CA 92832
Jennifer Egan, CA 92833
Teresa Franco, CA 92833
Ingrid Garner, CA 92835
Kenneth Green, CA 92835
Gavin Watt, CA 92835
Mary Bollong, CA 92840
Cathleen Cardoz, CA 92840
Maria Espinoza, CA 92840
Taryn Waddle, CA 92840
Janice Smallwood, CA 92843
Gonzalo Ortega, CA 92844
Jennifer Vargas, CA 92845
Cuba Munsey, CA 92856
Green Charoletta, CA 92860
Rosa Marquez, CA 92860
Lorraine Gurnari, CA 92865
Barbara Nelson, CA 92866
Terry Nowotarski, CA 92866
Valarie Brumfield, CA 92867
Janelle Farkas, CA 92867
Kazuo Furusawa, CA 92867
Prarthana Mohan, CA 92867
Janice Shelton, CA 92867
Jared Mendez, CA 92868
Tawny Robinson, CA 92868
Alan Aidekman, CA 92869
Ronald Dunbar, CA 92869
Kathryn England, CA 92869



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Vicki James, CA 92869
Saskia Knight, CA 92869
Gary Manulkin, CA 92869
Everett Martinez, CA 92869
Thomas Rapport, CA 92869
Charles Robinson, CA 92869
Patricia Duffie, CA 92870
Barbara Hearnese, CA 92870
Armando Morel, CA 92870
Jacqueline Olivier, CA 92870
David Hibbetts, CA 92879
Anne Johnson, CA 92879
Nora Gomez, CA 92880
JEANINE MAHONEY, CA 92880
Garrett Ball, CA 92881
Paul Carmichael, CA 92881
Charlie Lachance, CA 92881
Peggy Mutsch, CA 92881
Jill Ross, CA 92881
Roseanna Barron, CA 92882
Cynthia Chavez, CA 92882
Lance Frantzich, CA 92882
Catrina Paez, CA 92882
Ruben Saldana, CA 92882
Jackie Hearnese, CA 92883
Linda Limberg, CA 92883
Sally DePoy, CA 92887
Jim Heaviside, CA 92887
Marguerite Mulhall, CA 92887
Jennifer Nichols, CA 92887

Heather Aebi, CA 93001
Mike Blacker, CA 93001
Caryn Carroll, CA 93001
Dennis Hall, CA 93001
Donald Hill, CA 93001
Barbara Urban, CA 93001
Timothy Vandehey, CA 93001
Jojo Alvarez, CA 93003
Bruce Barrios, CA 93003
Carl Clapham, CA 93003
Erica Connell, CA 93003
Dorian Guerrero, CA 93003
Marsha Morrow, CA 93003
Sharon Anglum, CA 93004
Stephen Ginn, CA 93004
Rita Mercado, CA 93004
Benjamin Ayala, CA 93010
Margaret Doten, CA 93010
Joan Handzel, CA 93010
Melissa Reynolds, CA 93010
Bob Rust, CA 93010
Patricia Carney, CA 93012
Gloria Deaton, CA 93012
Dave McLaughlin, CA 93012
Barbara Metier, CA 93012
Meleese Seigler, CA 93012
Kevin Smith, CA 93012
Gregory Speth, CA 93012
Margurite Stenberg, CA 93012
Linda Hernandez, CA 93013



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Gene Miller, CA 93013

Jeanne Cantaro, CA 93015

Marilyn Marme, CA 93021

Tom Martinez, CA 93022

Lanae Carter, CA 93023

Robert Dodge, CA 93023

Jan Helfrich, CA 93023

Jinx Mccune, CA 93023

Judy Rosenthal, CA 93023

Sandra Rowse, CA 93023

W Slaughter, CA 93023

James Null, CA 93024

Pearl Montorio, CA 93030

Silvano Pivato, CA 93030

Cheryl Daniels, CA 93033

Victoria Borjesson, CA 93035

Jennifer Clancy, CA 93035

Kara Gastelum, CA 93035

David Harper, CA 93035

Alison Norris, CA 93035

Dawn O'Neill, CA 93035

Robert Rubin, CA 93035

Sylvia Salas, CA 93035

Ritchie Wimberly, CA 93035

Michael Combs, CA 93041

Cynthia Aguilar, CA 93060

Tony Luboff, CA 93060

Joseph Simpson, CA 93060

Claudia Eaton, CA 93063

Henrik Larsen, CA 93063

Christopher Mcadamis, CA 93063

Anthony Sgaraglino, CA 93063

William Sutton, CA 93063

Claude Cantin, CA 93065

Barbara Cieslak, CA 93065

Sandra Gill, CA 93065

Joanne Hewitt, CA 93065

Jamie Taylor, CA 93065

Sanford Weisberg, CA 93065

Kathleen Moacanin, CA 93066

Jeffrey Graham, CA 93067

Christine Dawkins, CA 93101

Cris Hamilton, CA 93101

Laura Knight, CA 93101

Alaina Kwasizur, CA 93101

Nancy Marriott, CA 93101

Rita Moya, CA 93101

Lin Rolens, CA 93101

John Skotchdopole, CA 93101

Barry Spector, CA 93101

Karen Atkins, CA 93105

Judy Cleary, CA 93105

Anthony Fischer, CA 93105

Kim Gross, CA 93105

Andrew Bermant, CA 93108

Amanda Berry, CA 93108

Burks Hamner, CA 93108

Patricia Hughes, CA 93108

Margaret Pearson, CA 93108

Dan Wright, CA 93108



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Vicky Blum, CA 93109

Katherine Bonfilio, CA 93109

Ted Chiles, CA 93109

Carolyn Sacks, CA 93109

Susan Bell, CA 93110

claudette roehrig, CA 93110

Theresa Sanitate, CA 93110

Rosemary Fatano, CA 93111

Teena Grant, CA 93111

Joanna Lara, CA 93111

James Sirianni, CA 93111

Ana Citrin, CA 93117

Frank Farwell, CA 93117

Kyle Furlong, CA 93117

Anelise Salvo, CA 93117

Inez Provencio, CA 93202

Jennifer House, CA 93221

Jack Lara, CA 93221

John Peters, CA 93222

Circe Cox, CA 93225

Emily Burnias, CA 93230

Sylvia Cordero, CA 93230

Tasha Mcirvin, CA 93240

Tracy Nardiello, CA 93247

Evelina Huizar, CA 93256

Carol Jett, CA 93257

Bonnie Karlea, CA 93257

Theodore Pizanis, CA 93257

Lauri Adair, CA 93263

Elenora Moats, CA 93263

Jerry Hawley, CA 93274

Sally Carter, CA 93277

Darrell Chudej, CA 93277

Angelina Eich, CA 93277

Karen Kirkpatrick, CA 93277

Diane Post, CA 93277

Susan Radtke, CA 93277

Adria Warren, CA 93277

Carol Harrison, CA 93279

Colleen Brelje, CA 93283

Marian Kuster, CA 93291

Linda Swaim, CA 93291

Abel Tavarez, CA 93291

Benjamin Newcomer, CA 93292

Marlina Aran, CA 93304

Karen Cooley, CA 93304

Barbara Mattick, CA 93304

Donald Bender, CA 93306

Belva Bradshaw, CA 93308

Miguel Mariscal, CA 93308

Janet Cogdill, CA 93309

Michelle Roberts, CA 93309

Ernest Solano, CA 93309

Fredrick Turner, CA 93309

Valerie Black, CA 93311

Lori Braschler, CA 93311

Yvonne Cavanagh, CA 93311

Marklewisbrown Heckendorn, CA 93311

Elizabeth Primrose, CA 93311

Priscilla Wright, CA 93311



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Casey Yeazel, CA 93311
Becky Wright, CA 93312
Val Barron, CA 93313
Bonnie Gallegos, CA 93313
Brian Russom, CA 93313
Ricardo Salas, CA 93390
Erin Englund, CA 93401
Marilyn Farmer, CA 93401
Sandra Giberson, CA 93401
Vikas Jammalamadaka, CA 93401
Joann Merver, CA 93401
Susan Olson, CA 93401
Patricia Robinson, CA 93401
Judith Serafin, CA 93401
William Tuculet, CA 93401
Kara Woodruff, CA 93401
Carolyn Porco, CA 93402
Richard Schermerhorn, CA 93402
Michelle Turner, CA 93402
Christy Anderson, CA 93405
Germaine Casola, CA 93405
Thomas Flanigan, CA 93405
Dee Ann Hairgrove, CA 93405
Carol Sexton, CA 93405
Nancy Holman, CA 93420
Robin Werderits, CA 93420
Michele Coombs, CA 93422
Lynne Higgins, CA 93422
Denise Nickeson, CA 93422
Joseph Nickless, CA 93422

Rayna Ortizbochum, CA 93422
Crissa Pisa, CA 93422
Catherine Porter, CA 93422
Harry Williamson, CA 93422
Daniel Garcia, CA 93428
Janet Lyon, CA 93428
Suzann Love, CA 93430
Judy Guarnera, CA 93433
Judythe Guarnera, CA 93433
Jennifer Mangum, CA 93433
Peter Anderson, CA 93436
Genese Izuno, CA 93436
Frank Matela, CA 93436
Leilani Mccullough, CA 93436
Anita Withers, CA 93440
Kim Barrett, CA 93442
Robert Jonez, CA 93442
Caroline Brower, CA 93444
Lee Durard, CA 93444
Ryan Tafoya, CA 93444
Lynn Davis, CA 93446
Nancy Jambor, CA 93446
Robert Jordan, CA 93446
Del Olds, CA 93446
Dennis Olivier, CA 93446
Donna Raymond, CA 93446
Stuart Toomey, CA 93446
Gary Wray, CA 93446
Marcella Gelman, CA 93449
Paul Vangerwen, CA 93449



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Gael Mueller, CA 93453
Diana Corral, CA 93454
Erika Culley, CA 93455
Sharon Haneman, CA 93455
Judith Lazzarini, CA 93455
Pam Martin, CA 93455
Larry McDuff, CA 93455
George Fischer, CA 93458
Loren Duffy, CA 93460
Michael Rhodes, CA 93460
Rona Barrett, CA 93463
Joyce Johnson, CA 93463
John Porter, CA 93465
Janet Kehlor, CA 93505
Michael Glavin, CA 93510
Sandra Gunther, CA 93510
Steven Sheffield, CA 93510
Karen Keehn, CA 93514
Karyle Tong, CA 93514
William Michael, CA 93526
Damien Jacotin, CA 93527
Joan Tetreault, CA 93531
Matthew Britton, CA 93535
Tiffany Countryman, CA 93535
Ian Guyton, CA 93535
Donna Mcnew, CA 93535
Tanisha Rodriguez, CA 93535
Carol Trees, CA 93535
Virginia Arcos, CA 93536
Clare Gmur, CA 93536

Gabriel Partida, CA 93536
Madeline Ramirez, CA 93536
Felicia Scott, CA 93536
Judy Wickman, CA 93545
Douglas Stewart, CA 93546
Hoang Baumann, CA 93550
Raymundo Perales, CA 93550
Bonnie Vaughan, CA 93550
Amina Vela, CA 93550
Olivia Carchi, CA 93551
Cuthbert Lawry, CA 93551
Dennis Carey, CA 93552
Cynthia Bradley, CA 93555
Ashton Dunn, CA 93555
Gaynell Schiller, CA 93555
James Stanford, CA 93555
Naomi Heinsma, CA 93556
Adelle Gruett, CA 93561
Denise Rowles, CA 93561
Raymond Vaughn, CA 93561
Duane Aitken, CA 93599
Diane Curfman, CA 93611
Elysia Dambrosia, CA 93611
Cindy Farris, CA 93611
Glen Westersund, CA 93611
Jerry Walker, CA 93612
Gale Okazaki Hugh, CA 93614
Jim Betts, CA 93619
Juan Garcia, CA 93619
Denise Gravano, CA 93619



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Greg Griffin, CA 93619
Carolyn Kraft, CA 93619
Thomas Sims, CA 93619
Judie Visser, CA 93619
Julie Young, CA 93619
Valerie Sponberg, CA 93631
Judith Pucci, CA 93636
Ben Graham, CA 93638
Sharon Willy, CA 93643
Polly Rotan, CA 93654
Jordan Telford, CA 93657
Sandra Barbo, CA 93662
Gus Longoria, CA 93702
Kate Mcknight, CA 93703
Joseph Barron, CA 93704
Janet Bray, CA 93704
Ivy Darden, CA 93704
Michael Garcia, CA 93704
Adela Gonzalez, CA 93704
P Hansen, CA 93704
Joann Mccarthy, CA 93704
Emily Vega, CA 93704
Esperanza Velazco, CA 93704
Kiki Wells, CA 93704
Rene Cisneros, CA 93705
Elizabeth Madrigal, CA 93705
Paula Singer, CA 93705
Nancy Godwin, CA 93710
Elaine Cavitt, CA 93711
Marsha Conant, CA 93711

Fredricka Del Carlo, CA 93711
Geetanjali Srivastava, CA 93711
Anne Staley, CA 93711
Teddy Usude, CA 93711
Roberta Atkinson, CA 93720
Krista De La Torre, CA 93720
Juan Herrera, CA 93720
Cameron Rosso, CA 93720
Erin Smith, CA 93720
Doug Gordon, CA 93721
Hannah Degroot, CA 93722
Billie Hardcastle, CA 93722
Roxanne Hinds, CA 93722
Carla Manning, CA 93722
Manuel Graves, CA 93723
Mian Ijaz, CA 93725
Barbara Ortiz, CA 93725
Joyce Gonzalez, CA 93726
Michael Mathies, CA 93726
Bonnie Pavlovich, CA 93726
Warren Vang, CA 93726
Irma Vera, CA 93726
Dawn Williams, CA 93726
Samantha Perez, CA 93727
Carlos Sanchez, CA 93727
Lindsay Shaver, CA 93728
Victor Bergman, CA 93729
Leslie Hoyt, CA 93730
Lloyd Wamhof, CA 93730
Elaine McGraw, CA 93744



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Aramis Miller, CA 93747

Kate Innis, CA 93901

Gary Jones, CA 93901

S Norris, CA 93901

Barbie Souter, CA 93901

Marisol Gonzalez, CA 93905

Ben Carrillo, CA 93906

Rosa Dozal, CA 93906

Ronald Genauer, CA 93906

Elena Lagrimas, CA 93906

Mary Vought, CA 93906

Carl Hazen, CA 93907

Weston Miller, CA 93907

Janice Mulvey, CA 93907

Patricia Arias, CA 93908

Catherine Fanoë, CA 93908

Mary Eileen Kiniry, CA 93908

Pamela Snyder, CA 93908

Michael Weaver, CA 93922

Myrna Brandwein, CA 93923

Gary Jepson, CA 93923

Jenny Lutes, CA 93923

Diane Woodend, CA 93923

Kenneth Mcclintock, CA 93926

Curtis Mukes, CA 93933

Laura Allen, CA 93940

Elaine Bachmann, CA 93940

Steven Crain, CA 93940

Colleen Devlin, CA 93940

Roseanne Fischer, CA 93940

Sandra Fowler, CA 93940

Christopher Kneisley, CA 93940

Barbara Marron, CA 93940

Regina Marshall, CA 93940

Juan Rodriguez, CA 93940

Nina Rosete, CA 93940

Niccole Tiffany, CA 93940

Maureen Vieth, CA 93940

Elizabeth Weber, CA 93940

Marianne Grover, CA 93950

Linda Hylle, CA 93950

Janet MCGough, CA 93950

Donna Phillips, CA 93950

Angelique Simons, CA 93950

Maryadine Washington, CA 93955

Russell Kinley, CA 93960

Robert Gold, CA 94002

Robin Mckoy, CA 94002

Carol Molyneux, CA 94002

Kay Yoshida, CA 94002

Ann Whittemore, CA 94005

Mike Alleman, CA 94010

Maureen Boland, CA 94010

Peter Borocz, CA 94010

Sophie Colefoster, CA 94010

Richard Davis, CA 94010

Lynn Feeney, CA 94010

David Jen, CA 94010

Dotti Letourneau, CA 94010

Lenny Low, CA 94010



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Ramon Maghsoudi, CA 94010

Sidney Mobell, CA 94010

William Pace, CA 94010

Jennifer Parker, CA 94010

Charlotte Petri, CA 94010

Judy Swanson, CA 94010

Gary Toothman, CA 94010

Monroe Cooper, CA 94014

Edwin Lansang, CA 94014

Irene Marin, CA 94014

Ana Montes, CA 94014

Concepcion Cavales, CA 94015

Kathleen Cunnie, CA 94015

Kendra Elliott, CA 94015

Rosario Polis, CA 94015

Deborah Porter, CA 94017

Tricia Dell, CA 94018

Sabrina Jewell, CA 94019

Lisa Mccaffrey, CA 94019

Penny Oneal, CA 94019

Sharon Ruhland, CA 94019

Jenny Skoble, CA 94019

Stephen Friedman, CA 94022

Sheryl Heckman, CA 94022

Mary Mills, CA 94022

Elfi Montes, CA 94022

Pam Rasmussen, CA 94022

Francine Reynolds, CA 94022

Mary Hall, CA 94024

Barbara Mclellan, CA 94024

Cynthia Sweeney, CA 94024

Leslie Alston, CA 94025

Dimitra Anderson, CA 94025

John Beardslee, CA 94025

Nancy Bush, CA 94025

Kevin Collins, CA 94025

William Dower, CA 94025

Susan Freyberg, CA 94025

Judith Kleinberg, CA 94025

Jennie Kosko, CA 94025

Marissa Pike, CA 94025

Kathleen Riggins, CA 94025

Marilyn Spence, CA 94025

Polly Wingfield, CA 94025

Tom Gelbach, CA 94027

Tom Hutton, CA 94027

Stacey Kertsman, CA 94027

Anne Peterson, CA 94027

Deborah Pinkston, CA 94027

David Popowitz, CA 94027

Nina Else, CA 94028

Danielle Guttman, CA 94028

Paul Helce, CA 94028

Judy Klein, CA 94028

Helge Ternsten, CA 94028

Thomas Lightner, CA 94030

Ann Oleary, CA 94030

Yolanda Parker, CA 94030

Caitlin Reavey, CA 94030

Stephanie Allen, CA 94035



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Joseph Armstead, CA 94040

Corinne Callan, CA 94040

Richard Curtis, CA 94040

Ann Kato, CA 94041

Shreyes Seshasai, CA 94041

Peter Spangler, CA 94041

Joyce Tucker, CA 94041

Samantha Bears, CA 94043

Abigail Clark, CA 94043

Carole Flores, CA 94043

Walter Goode, CA 94043

Rebecca Jensen, CA 94043

Brittany McDonald, CA 94043

Saghi Moghadam, CA 94043

Evelyn Nordberg, CA 94043

Laurie Palmer, CA 94043

Bernie Rodgers, CA 94043

Karen Brandenberger, CA 94044

Caroline Herter, CA 94044

Nichole Herttua, CA 94044

Robert Meyerson, CA 94044

Laurel Patton, CA 94044

Beth Smerdon, CA 94044

Maryann Campion, CA 94061

Anna Engstrom, CA 94061

Ralph Fallant, CA 94061

Judith Gutierrez, CA 94061

Cheryl Macgregor, CA 94061

Gail Pomerantz, CA 94061

Susan Scott, CA 94061

Mark Siegel, CA 94061

Lora Angelot, CA 94062

Daniel Gibson, CA 94062

Brandon Rule, CA 94062

Melinda Davis, CA 94063

Paulette Elliott, CA 94063

Michele Kuperus, CA 94063

Marla Weber, CA 94063

Ana Oyuela, CA 94064

Michael Rogers, CA 94065

Manique Wijewardena Bloom, CA 94065

Corrine Aragon, CA 94066

Cheryl Hernandez, CA 94066

Kathy Rinetti, CA 94066

Jessica Williams, CA 94066

Mark Albertson, CA 94070

Vivian Brates, CA 94070

Arnulfo Ferfas, CA 94070

Helen Flynn, CA 94070

Marie Monohan, CA 94070

Gregory Brown, CA 94080

Barbara Butler, CA 94080

Caroline Dunn, CA 94080

Robert Merchan, CA 94080

Tom Mullen, CA 94080

Amy Nolan, CA 94080

Colleen Raymond, CA 94080

Raul Reyes, CA 94080

David Taylor, CA 94080

Judy Wedekind, CA 94080



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Thomas Williams, CA 94080

Prince Bibee, CA 94085

Michael Carder, CA 94085

Elisabeth Cone, CA 94086

Michael Goltzer, CA 94086

Russell Hudson, CA 94086

William Jenkins, CA 94086

Alec Reitter, CA 94086

Kathleen Tomari, CA 94086

Hao Zhou, CA 94086

Janice Boothe, CA 94087

Carl Cheng, CA 94087

Paul Falworth, CA 94087

Jan Looney, CA 94087

Marilyn Wendler, CA 94087

Alison White, CA 94087

Joseph Batchelder, CA 94089

Michelle Rifkin, CA 94089

Anne Farrah, CA 94102

Allegra Fortunati, CA 94102

Andrea Gomez, CA 94102

Valerie Gruber, CA 94102

William Heaps, CA 94102

Jennifer Levin, CA 94102

Carol Sexton, CA 94102

Bradley Wiedmaier, CA 94102

Rachel Becker, CA 94103

Amy Dipasquale, CA 94103

Derek Dukes, CA 94103

Lucas Foglia, CA 94103

Elisha Greenwell, CA 94103

Chris Hipps, CA 94103

Eamonn Kelly, CA 94103

Bonnie Rose, CA 94103

Victoria Rouse, CA 94103

Shelley Sandusky, CA 94103

Andrea Segura Smith, CA 94103

Sarah Vickers, CA 94103

Margaret Jacobberger, CA 94105

Dulcie Arnold, CA 94107

Natasha Arroyo, CA 94107

Toby Barlow, CA 94107

Michael Bergelson, CA 94107

Katherine Bowdish, CA 94107

Cassandra Caputo, CA 94107

Susan Cote, CA 94107

John Croizat, CA 94107

Martha Dean, CA 94107

Barbara Dickinson, CA 94107

Arthur Dixon, CA 94107

Jeffrey Galyon, CA 94107

Vera Grey, CA 94107

Amy Grigsby, CA 94107

Tal Hutchins, CA 94107

Kody Kilcrease, CA 94107

Joy M, CA 94107

Sally Mccarty, CA 94107

Elizabeth Mcnichols, CA 94107

Robyn Miles, CA 94107

Veronica Munoz, CA 94107



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Steven Phillips, CA 94107

David Ropp, CA 94107

Sudesh Singh, CA 94107

Helen Soboski, CA 94107

Ann Spivack, CA 94107

Don Spradlin, CA 94107

Emily Zing, CA 94107

Maria Boutacoff, CA 94108

Gary Cne, CA 94108

Alison Hightower, CA 94108

Howard Holderness, CA 94108

Kirsten Strobel, CA 94108

Rose Abril, CA 94109

Michael Andow, CA 94109

Allison Brown, CA 94109

Roberta Buell, CA 94109

Matthew Castillon, CA 94109

Mary Cody, CA 94109

Gail Defferari, CA 94109

David Goff, CA 94109

Melissa Grindstaff, CA 94109

Robert Hall, CA 94109

Doreen Horowitz, CA 94109

Louise Lowry, CA 94109

Timothy Lucas, CA 94109

Robert Panozzo, CA 94109

Jennie Parrilla, CA 94109

Nicole Pitarre, CA 94109

Jeanne Rizzo, CA 94109

Fred Sherman, CA 94109

Julie Tang, CA 94109

Jennifer Wang, CA 94109

Helene Wenzel, CA 94109

Nancy Williams, CA 94109

Ane Becker, CA 94110

Josephine Bellaco, CA 94110

Lisabeth Castro-Smyth, CA 94110

Patricia Cotter, CA 94110

Suzanne Deblois, CA 94110

Dale Disney, CA 94110

Erika Ehmsen, CA 94110

John Fenno, CA 94110

Consuelo Ferreira, CA 94110

Stuart Gurtman, CA 94110

Charles Hemminger, CA 94110

Connie Hendrix, CA 94110

Ester Hernandez, CA 94110

Mirna Jiron, CA 94110

Benjamin Kim, CA 94110

Nate Koechley, CA 94110

Efrem Korngold, CA 94110

Eric Lamothe, CA 94110

Peter Mattsson, CA 94110

Lisa Messano, CA 94110

Carol O'Donovan, CA 94110

Jodi Perelman, CA 94110

Nicole Petrak, CA 94110

Felisa Preskill, CA 94110

Lori Sinsley, CA 94110

Suzanne Spong, CA 94110



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Samuel Stone, CA 94110

Melinda Sullivan, CA 94110

Sasha Wisotsky, CA 94110

Ellen Embry, CA 94111

Barnett Klane, CA 94111

Jared Loewen, CA 94111

Jessica Silvestro, CA 94111

Charlie Stone, CA 94111

Jason Wallach, CA 94111

Brigitte Davila, CA 94112

Dernelio Echegoyen, CA 94112

George Engler, CA 94112

Herbert Jeong, CA 94112

Joe Litehiser, CA 94112

Sarah Machugh, CA 94112

Colby Ostberg, CA 94112

Sara Scanlan, CA 94112

Irene Smith, CA 94112

Robert Strawder, CA 94112

Joaquin Torres, CA 94112

Irene Zbiczak, CA 94112

Mark Ziegler, CA 94112

Michelle Birch, CA 94114

John Brooks, CA 94114

Steven Brown, CA 94114

Laurie Bushman, CA 94114

Lawrence Crickenberger, CA 94114

Gianna Defilippis, CA 94114

Susan Epstein, CA 94114

Helen Ferentinos, CA 94114

Richard Fouts, CA 94114

Stacey Lamirand, CA 94114

Dean Larson, CA 94114

Frank Latko, CA 94114

James Mchugh, CA 94114

Jeffrey Mitchell, CA 94114

Irma Perez, CA 94114

Ruben Perez, CA 94114

Jody Reichel, CA 94114

Robin Rome, CA 94114

Donald Schwarcz, CA 94114

Robert Scott, CA 94114

Edith Souter, CA 94114

Adam Sterling, CA 94114

Dale Tegman, CA 94114

John Wilkie, CA 94114

Christian Williams, CA 94114

Kathleen Yatskan, CA 94114

Nanette Bisher, CA 94115

Alejandra Calderon, CA 94115

Joanna Horsfall, CA 94115

David Isljamovski, CA 94115

Shan Kaur, CA 94115

Gerd Mairandres, CA 94115

Emily Martinez, CA 94115

Maureen Miller, CA 94115

Susan Miller, CA 94115

T o'Shea, CA 94115

Terri Perozzi, CA 94115

Sudie Sides, CA 94115



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Robert Starkey, CA 94115

James Walter, CA 94115

Amy Widdowson, CA 94115

Yevgenia Altman, CA 94116

Bryan Boyle, CA 94116

Max Kwok, CA 94116

Carlos Lazo, CA 94116

Diana Puig, CA 94116

Mary Shays, CA 94116

Monique Aas, CA 94117

Tyler Altrup, CA 94117

Jennifer Brown, CA 94117

Brina Bujkovsky, CA 94117

Nicole Censani, CA 94117

Don Ehrlich, CA 94117

Elana Feinberg, CA 94117

Melinda Frenkel, CA 94117

Stephen Hartman, CA 94117

Stephen Herman, CA 94117

Anna Ioakimedes, CA 94117

Courtney Iwanaga, CA 94117

Deborah Jaffe, CA 94117

Pam Kalinowski, CA 94117

Takahiro Kawaguchi, CA 94117

Joe Mullin, CA 94117

Thomas Munn, CA 94117

Travis Peterson, CA 94117

Alexander Pollen, CA 94117

Belinda Presser, CA 94117

Kevin Rasmussen, CA 94117

Stephen Rosenbaum, CA 94117

Aaron Sagin, CA 94117

Susanna Shimizu, CA 94117

Anne Sunderland, CA 94117

David Tang, CA 94117

Renee Ward, CA 94117

Tomohisa Watanabe, CA 94117

Deb Zipp, CA 94117

Katie Albright, CA 94118

John Ball, CA 94118

John Beebe, CA 94118

Andrew Blackwell, CA 94118

Benjamin Byrne, CA 94118

Nicholas Goncharoff, CA 94118

Robin Greg, CA 94118

Terrel Hutton, CA 94118

Christopher Keyes, CA 94118

Faith Luber, CA 94118

Teya Neff, CA 94118

William Pearson, CA 94118

Kerry Philp, CA 94118

Michael Pinell, CA 94118

Patti Prichard, CA 94118

Peter Roopnarine, CA 94118

Kyra Vargas, CA 94118

Michele Bronson, CA 94121

Michael Coletta, CA 94121

Kristina Dahl, CA 94121

Rikki De Wit, CA 94121

Paul Kirkland, CA 94121



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Maryjo Tisor, CA 94121
Sandra Ackers, CA 94122
Jessica Bayer, CA 94122
Myriam Delajara, CA 94122
Michael Fuchs, CA 94122
Jeff Ishizu, CA 94122
Diane Joneslowrey, CA 94122
Courtney Ryan, CA 94122
Anita Sigurdson, CA 94122
Laura Webber, CA 94122
Julie Baeder, CA 94123
Mike Gardner, CA 94123
Martin Gellen, CA 94123
Catherine Howley, CA 94123
Hayley Johnson, CA 94123
Robert Mcgown, CA 94123
Avia Mendez, CA 94123
Janice Moore, CA 94123
Russ Rogers, CA 94123
Luis Uribe, CA 94123
Miguel Galarza, CA 94124
Angelique Vonhalle, CA 94124
Allison Brown, CA 94127
Edith Matulac, CA 94127
Allison Metz, CA 94127
Dieter Meyerhoff, CA 94127
Michelle Childs, CA 94129
Robin Cornwell, CA 94129
Twonnette Pack, CA 94130
Ernesto Alfaro, CA 94131

Gerald Buss, CA 94131
Tod Elkins, CA 94131
Howard Fallon, CA 94131
Kieran Hannon, CA 94131
Alexis Panzer, CA 94131
Ashley Pittson, CA 94131
Michael Shpizner, CA 94131
Steffany Dignum, CA 94132
Youngha Lee, CA 94132
Nancy Mace, CA 94132
Rebecca Nepales, CA 94132
Michele Perlmutter, CA 94132
Jess Wells, CA 94132
Susan Adams, CA 94133
Emley Barbara, CA 94133
Michael Brunner, CA 94133
Linda Burke, CA 94133
Stacy Coghlan, CA 94133
Tom Edgar, CA 94133
Haideen Anderson, CA 94134
Michelle Biondini, CA 94134
Mitch Clark, CA 94134
Rolando Nunez Baza, CA 94134
Jaime Osorio, CA 94134
Michael Walsh, CA 94140
Robert Tessler, CA 94143
Maira Matsui, CA 94158
Kimberly Parolari, CA 94164
Takhong Guan, CA 94301
Gregory Hosono, CA 94301



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Mary Nemerov, CA 94301

Ann Phares, CA 94301

Josh Rubietta, CA 94301

Margaret Simmons, CA 94301

Brian Goncher, CA 94303

Rick Jew, CA 94303

Lachen Pence, CA 94303

Thomas Snodgrass, CA 94303

Jj Davis, CA 94304

David Keefer, CA 94305

Barbara Wada, CA 94305

Irene Wapnir, CA 94305

Paul Cegielski, CA 94306

Sarah Cornwell, CA 94306

Megan Dunn, CA 94306

Kevin Hurley, CA 94306

Robert Klein, CA 94306

David Morandi, CA 94306

Joel Rosenberg, CA 94306

Ilya Veygman, CA 94306

Jay Levin, CA 94401

Natalia Nicholson, CA 94401

Tomasi Toki, CA 94401

Amber Farinha, CA 94402

Cynthia Ladd, CA 94402

Elizabeth Landsverk, CA 94402

Julie Neale, CA 94402

Benjamin Rubenstein, CA 94402

Sheila Sandow, CA 94402

Ross Weiner, CA 94402

Karen Biggers, CA 94403

Grace Hassid, CA 94403

Jane Mc Creary, CA 94403

Marianda Fahrnbruch, CA 94404

Nicole Gregory, CA 94404

Jennifer Sand, CA 94404

George Vail, CA 94404

Roxana Wales, CA 94404

John Chase, CA 94501

Anthony Dimaano, CA 94501

Benjamin Finkenbinder, CA 94501

Carlanne Foushee, CA 94501

Jeannine Gravem, CA 94501

Spencer Gross, CA 94501

Jill Hartman, CA 94501

Lori Hitchcock, CA 94501

Judith Hoff, CA 94501

Amba Johnson, CA 94501

Mary Larivers, CA 94501

Jessica Lilie, CA 94501

Erika Monterroza, CA 94501

Kelly Peterson, CA 94501

Anna Rossi, CA 94501

Claire Splan, CA 94501

Oscar Trevino, CA 94501

Linda Yang, CA 94501

Choni Yangzom, CA 94501

Cynthia Brashaun, CA 94502

Andrew Cohen, CA 94502

Cheryl Jones, CA 94502



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Frances Shipilov, CA 94505

Steve Filson, CA 94506

Lori Garcia, CA 94506

Elizabeth Ng, CA 94506

Mark Wolfe, CA 94506

Raymond Cocchi, CA 94507

Fred Pazos, CA 94507

Richard Harrison, CA 94508

Kenneth Moll, CA 94508

Robert Stelling, CA 94508

Andre Clark, CA 94509

Terry Lakin, CA 94509

Juanita Patton-Alexandr, CA 94509

Teresa Pedras, CA 94509

Aida Rubio, CA 94509

Kornelia Strong, CA 94509

Michael Young, CA 94509

Elizabeth Nolan, CA 94510

Harry Andujar, CA 94513

Randa Awwad, CA 94513

Donald Burrow, CA 94513

Heather Partid, CA 94513

Jack Martin, CA 94515

Marcia Carrasco, CA 94517

Terry Barger, CA 94518

Michelle Curran, CA 94518

Jose Garcia, CA 94518

Ignacio Sanchez Hernandez, CA 94518

Casey Sasser, CA 94518

Christine Swieszcz, CA 94518

KATHERINE UTCHEN, CA 94518

Patricia Brinton, CA 94519

Louis Dreyer, CA 94519

Samantha Fields, CA 94519

Megan Hallahan, CA 94519

Lisa Salbato, CA 94519

Melanie Thompson, CA 94519

Ann Collins, CA 94520

Salma Noor, CA 94520

Ellen Barrons, CA 94521

David Belli, CA 94521

Kimberly Espina, CA 94521

Craig Fleming, CA 94521

William Guthreau, CA 94521

Kevin Murphy, CA 94521

Richard Villalobos, CA 94521

Nicholas Kennen, CA 94523

James Phelan, CA 94523

Bruce Presnick, CA 94523

Iris Segal, CA 94523

Debra Stanley, CA 94523

Cathy Teegardin, CA 94523

Stephen Wilde, CA 94523

Erin Foley, CA 94526

Kevin Walker, CA 94526

Michele Ward, CA 94526

Chris Winter, CA 94526

Norman Bookstein, CA 94530

Betty Buginas, CA 94530

Jane Davis, CA 94530



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jennifer Kawar, CA 94530

Robert Maccoun, CA 94530

Monica Montgomery, CA 94530

Lisa Schoof, CA 94530

William Scott, CA 94530

Jemma Williams, CA 94530

Ruben Apodaca, CA 94531

Barbara Heredia, CA 94531

Connie Roark, CA 94531

Tonya Alston, CA 94533

Larry Bluford, CA 94533

Guadalupe Castro, CA 94533

Danielle Fischer, CA 94533

Myra Somerville, CA 94533

Steve Anaya, CA 94534

Lori Byrd, CA 94534

Samuel Catani, CA 94534

Robyn Collins, CA 94534

Everett Wood, CA 94534

Catherine Foster, CA 94536

Nicholas Horn, CA 94536

James Jensen, CA 94536

Richard Jones, CA 94536

Tamari Kirtadze, CA 94536

Elizabeth Knight, CA 94536

Eleanor Lykins, CA 94536

Alexis Madrid, CA 94536

Janet Quilici, CA 94536

George Avila, CA 94538

Venkata Balaji, CA 94538

Kristie Bihl, CA 94538

Andrew Strommen, CA 94538

Derrick Watson, CA 94538

Gilbert Doan, CA 94539

Valerie Kavlick, CA 94539

Matthew McGinty, CA 94539

Shubhang Varma, CA 94539

Erlinda Flores, CA 94540

Catherine Ruesz, CA 94540

Bill Bradley, CA 94541

Kevin Burns, CA 94541

Adriana Gilmete, CA 94541

Sarah White, CA 94541

Kathleen Affleck, CA 94542

Jacki Anderson, CA 94542

Sandra Huffman, CA 94542

Elaine Jonesayer, CA 94542

Stephen Miller, CA 94542

Carol Morgan, CA 94542

Craig Browning, CA 94544

Patricia Smith, CA 94544

Carlos Uriarte, CA 94544

Earlene Wiley, CA 94544

Faisal Hamid, CA 94545

Alice Kemp, CA 94545

Joan Smith, CA 94545

David Butner, CA 94546

Edward Byrne, CA 94546

Lou Johnstone, CA 94546

Yvonne Jones, CA 94546



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Steve Lewis, CA 94546

Katherine Sullivan, CA 94546

Christine The, CA 94546

James Wildeman, CA 94546

Allison Montgomery, CA 94547

Thomas Bishop, CA 94549

David Chiappetta, CA 94549

Julie Jarratt, CA 94549

Tim Lynch, CA 94549

Kathleen Marshall, CA 94549

Nick Pasto, CA 94549

Kathleen Penn, CA 94549

Jessica Uppal, CA 94549

Cynthia Benson, CA 94550

Mark Cameron, CA 94550

James Krossa, CA 94550

Jesse Palma, CA 94550

Marisa Balfour, CA 94551

Yvonne Konneker, CA 94551

Pamela Miller, CA 94551

Michael Reed, CA 94551

Melissa Wilson, CA 94551

Edward Molyneaux, CA 94552

Sonja Neal, CA 94552

Santha Pisharody, CA 94552

Pickens Saxton, CA 94552

Sondra Yellen, CA 94552

Eva Antilla, CA 94553

Sharon Cravanas, CA 94553

Deborah Cuevas, CA 94553

Terry Flaherty, CA 94553

Steven Freedman, CA 94553

Hope Garcia, CA 94553

Richard Keenley, CA 94553

Shirley Mcelhattan, CA 94553

Carole Nacon, CA 94553

Kathleen Nichols, CA 94553

Courtney Obrien, CA 94553

Virginia Pursley, CA 94553

Monica Rinna, CA 94553

Mark Salimbeve, CA 94553

Lisa Songster, CA 94553

Carol Sprecher, CA 94553

James Swide, CA 94553

Maurice Turrieta, CA 94553

Dolores Velasco, CA 94553

Janet Volkar, CA 94553

Ajay Aggrwal, CA 94555

Subbiah Kandasamy, CA 94555

Ralph Thomas, CA 94555

Gregory Watkins, CA 94556

Alex Alpert, CA 94558

Kira Ballotta, CA 94558

Oscar Castelo, CA 94558

Kris Freewoman, CA 94558

Tony Heinricher, CA 94558

Christopher Hoel, CA 94558

Linda Inlay, CA 94558

Nancy Nauman, CA 94558

Jeff Prather, CA 94558



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Kendra Schalk, CA 94558

Alice Shearon, CA 94558

William Wendt, CA 94558

Kathryn Corna, CA 94559

Daniel Johns, CA 94559

Brian Nuss, CA 94559

Becky Peterson, CA 94559

Carolyn Sanchez, CA 94559

William Lockwood, CA 94560

Harral Robin, CA 94560

Nathalie Lezama-Ferro, CA 94561

John Zamora, CA 94561

Kathleen Dell'Aquila, CA 94563

Kyle Faulker, CA 94563

Lynn Uzzo, CA 94563

Ronald Wallace, CA 94563

Emily Wu, CA 94563

Ann Clay, CA 94564

Linda Katz, CA 94564

Cherry Molinari, CA 94564

Jasmine Smith, CA 94564

Katherine Dilao, CA 94565

Randall Gutierrez, CA 94565

Lisa Maule, CA 94565

Jennifer Achtert, CA 94566

Ede Bruce, CA 94566

Leonore Cusenza, CA 94566

Sriram Garimella, CA 94566

Linda Jordan, CA 94566

Serena Klimek, CA 94566

Sharon Marshall, CA 94566

Anil Mirchandani, CA 94566

Kori Neilsen, CA 94566

Robert Shenon, CA 94566

Sheila Thompson, CA 94566

Vito Tragni, CA 94566

Pegah Barzegar, CA 94568

Michele Day, CA 94568

Laurie Grand, CA 94568

Glenda Leatherman, CA 94568

Sam Mohanta, CA 94568

Linda Ballard, CA 94571

Joseph Pinkney, CA 94571

Justine Tenzeldam, CA 94572

Ann Estrada, CA 94574

Elaine Honig, CA 94574

Dawn Leininger, CA 94574

John Quinn, CA 94574

Miriam Delagrange, CA 94577

Anita Hong, CA 94577

Patricia Kilroe, CA 94577

Kerry Kurtz, CA 94577

Don Magnifico, CA 94577

Ilana Marcucci-Morris, CA 94577

Edward Strickland, CA 94577

Soraya Rahami, CA 94578

Mattie Turner, CA 94578

Karin Flores, CA 94579

Dori Grandbois, CA 94579

Mike Lanfear, CA 94580



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Akira Sasaki, CA 94582
Julie Buchanan, CA 94583
Sharon Donovan, CA 94583
Mona Epstein, CA 94583
Jana Johnson, CA 94583
John Moore, CA 94583
Penny Wolfsohn, CA 94583
Vicky Clayton, CA 94585
Russell Jordan, CA 94586
Michael Mitchell, CA 94586
Todd Benson, CA 94587
Daniel Chaja, CA 94587
Aaron Christianson, CA 94587
Michael Guevara, CA 94587
Schola Idem, CA 94587
Dorothy Jones, CA 94587
Susan Lydick, CA 94587
Rick Munoz, CA 94587
Robin Talbott, CA 94587
James Woodhead, CA 94587
Alex Briones, CA 94588
Michelle Lee, CA 94588
June Lister, CA 94588
Heidi Mcfadden, CA 94588
David Telles, CA 94588
Vicky Fagan, CA 94589
Craig Christena, CA 94590
Amy Combs, CA 94590
Jimmy Genn, CA 94590
Sheri Jepperson, CA 94590

Alan Kimelman, CA 94590
Randall Koch, CA 94590
Robert Lewis, CA 94590
Kevin Radley, CA 94590
James Worthen, CA 94590
Natalia Zuniga, CA 94590
John Lawson, CA 94591
Steven Pasquale, CA 94591
Amelia Smith, CA 94591
Shannon Williams, CA 94591
Susan Williams, CA 94591
Paul Roberts, CA 94592
Kendra Berch, CA 94595
Steven Freemire, CA 94595
Stephanie Johnsonbaugh, CA 94595
Elizabeth Johnston, CA 94595
Drue Kramer, CA 94595
Marie Krausova, CA 94595
Nora Lapointe, CA 94595
David Mcmurry, CA 94595
Irene Wong, CA 94595
Robert Beavers, CA 94596
Karen Davey, CA 94596
Susan Iwamoto, CA 94596
Matthew Lawson, CA 94596
Randall Thompson, CA 94596
Kristy Wheeler, CA 94596
Robin Wolf, CA 94596
jane Corcoran, CA 94597
Paul Gommel, CA 94597



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Cary Hellman, CA 94597

Elliott Leas, CA 94597

Danny Fried, CA 94598

John Hall, CA 94598

Allen Krimmel, CA 94598

Stewart Nakamura, CA 94598

Michael Strong, CA 94598

Lori Thomas, CA 94598

Omar Alaji, CA 94601

Nancy Broderick, CA 94601

Theresa Catlin, CA 94601

Cheri King, CA 94601

Mark Gilley, CA 94602

Edward Grigas, CA 94602

Jes Levine, CA 94602

Natasha Middleton, CA 94602

Brook Stern, CA 94602

Bonnie Stewart, CA 94602

Barbara Szudy, CA 94602

Gerrie Washburn, CA 94602

Karl Zitzow, CA 94602

Russell Blume, CA 94605

Dennie Cambitsis, CA 94605

Charlotte Campbell, CA 94605

Betty Mechles, CA 94605

Linda Petersen, CA 94605

Judith Rowan, CA 94606

Hoang Vuong, CA 94606

Jack Whiteford, CA 94606

Sue Ballinger, CA 94607

Odell Gibbs, CA 94607

Matthew Maltbie, CA 94607

Gregory Owens, CA 94607

Jill Shortley, CA 94607

Vani Singleton, CA 94607

Joanne Dickerson, CA 94608

Ben Ezeokoli, CA 94608

Daniel Gamboa, CA 94608

Peter Glazer, CA 94608

Michaele Smith, CA 94608

Alfred Edwards, CA 94609

Cassie Lopez, CA 94609

Stephanie Orozco, CA 94609

Kay Shearer, CA 94609

Dustin Smith, CA 94609

Jane Smith, CA 94609

Abdulaziz Alkhamri, CA 94610

Dale Bachman, CA 94610

Joanna Black, CA 94610

Shannon Coleman, CA 94610

Tracey Corder, CA 94610

Dias Cynthia, CA 94610

Marilyn Flower, CA 94610

Jim Hickman, CA 94610

Jewel Jauregui, CA 94610

Patricia Littlefield, CA 94610

Sabrina Moreno, CA 94610

Yeh Ray, CA 94610

Molly Sims, CA 94610

Peter Takeuchi, CA 94610



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Ceil Tilney, CA 94610

Endrias Yohannes, CA 94610

David Arndt, CA 94611

Ada Burko, CA 94611

Blue Figueroa, CA 94611

Adella Gaston, CA 94611

Glen Hughes, CA 94611

Sarah Karlinsky, CA 94611

Michael Lamp, CA 94611

Meg Mcadam, CA 94611

Pamela Mercer, CA 94611

Daniel Newbrun, CA 94611

Terry Roemer, CA 94611

Suzanne Rowell, CA 94611

Dawn Warriner, CA 94611

Thomas Wright, CA 94611

Philip Zymet, CA 94611

Kevin Bean, CA 94612

Ernest Gundling, CA 94612

Penny Kreitzer, CA 94612

Lynda Morgan, CA 94612

Joseph Quisol, CA 94612

Peter Abel, CA 94618

Nicole Delger, CA 94618

Tracey Grossbach, CA 94618

Paula Hamilton, CA 94618

Lisa Kermish, CA 94618

Carl Resnikoff, CA 94618

Katrina Saba, CA 94618

Fran Solomon, CA 94618

Elizabeth Vanbenschoten, CA 94618

Ayanna Bennett, CA 94619

Diane Garner, CA 94619

Margaret Hu, CA 94619

Jacqueline Joseph-Veal, CA 94619

John Lee, CA 94619

Stuart Liroff, CA 94619

Sylvia Mcdaniel, CA 94619

Erin Miller, CA 94619

Meagan Mitchell, CA 94619

Robin Rosario, CA 94619

Thomas Swift, CA 94619

Susan Kaplan, CA 94702

Devon Lake, CA 94702

Ary Amerikaner, CA 94703

Sarah Crabtree, CA 94703

Brian Linde, CA 94703

Katherine Paur, CA 94703

Leah Simonweisberg, CA 94703

Vicki Sommer, CA 94703

Moulitsas Markos, CA 94704

Paul Mccold, CA 94704

Rohit Agrawal, CA 94705

Chris Averett, CA 94705

Helen Kim, CA 94705

Thomas Leong, CA 94705

Lisa Valentine, CA 94705

William Veale, CA 94705

Miles Culpepper, CA 94706

Rande Johnson, CA 94706



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Lise Narath, CA 94706
Richard Wong, CA 94706
Kenneth Hempel, CA 94707
Susanne Huttner, CA 94707
Gail Miles, CA 94707
Paul Gill, CA 94708
Rose Morrell, CA 94708
David Bank, CA 94709
Nancy Denero, CA 94709
Guy Isely, CA 94709
Stephen Levine, CA 94709
Laurie Loftus, CA 94710
Clara Mclean, CA 94710
Summer Oram, CA 94710
Lydia Anderson, CA 94801
Frank Andrade, CA 94801
Susan Binder, CA 94801
Marsha Tomassi, CA 94801
Sharon Waterman, CA 94801
Lizabeth Asami, CA 94803
Diane Harris, CA 94803
Willie Jackson, CA 94803
Martha Acosta, CA 94804
Ian Carey, CA 94804
Shannon Erby, CA 94804
Gary Frank, CA 94804
Nancy Gruver, CA 94804
Raleigh Latham, CA 94804
Leatrice Lyon, CA 94804
Elizabeth Masterson, CA 94804

Lynne Maylath, CA 94804
Barbara Needell, CA 94804
Craig Parada, CA 94804
Marsha Vaughn, CA 94804
Amanda Bowens, CA 94805
Serena Donovan, CA 94805
Ruth Levin, CA 94805
Katherine Ralph, CA 94805
Michele Rappaport, CA 94805
Joseph Sosensky, CA 94805
Patsy Stubbs, CA 94805
Darrione Glover, CA 94806
Martin Goldie, CA 94806
Sam Maxie, CA 94806
Katherine Beacock, CA 94901
Jeanne Brophy, CA 94901
Rose Hunter, CA 94901
Mari Johnson, CA 94901
Dorothy Jones, CA 94901
Veronica Kirkpatrick, CA 94901
Barbara Levinson, CA 94901
Alexa Lucas, CA 94901
Sara Marchi, CA 94901
Anna Melillo, CA 94901
Miguel Ohara, CA 94901
Kathleen Pallie, CA 94901
Craig Shinnefield, CA 94901
Richard Britton, CA 94903
Marilynne Chophel, CA 94903
Christopher Fadeff, CA 94903



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Walter Searway, CA 94903

Constance Sewing, CA 94903

Adam Silver, CA 94903

Cathy Tennant, CA 94903

Alfred Wallace, CA 94903

Brian Gleeson, CA 94904

Richard Lawrence, CA 94904

Emily Neill, CA 94904

Tanja Ross, CA 94904

Laura Talmus, CA 94904

Janet Wiginton, CA 94904

Lisa Flannigan, CA 94912

Janet Weil, CA 94920

Godie Gale, CA 94923

Joseph Straton, CA 94924

Leslie Baker, CA 94925

Glenda Corning, CA 94925

Candice Crider, CA 94925

Lori Saltveit, CA 94925

Sergio Canavati De La Torre, CA 94928

Pamela Feltrop, CA 94928

Timothy Griesser, CA 94928

Deanna Harmon, CA 94928

Tyson Hill, CA 94928

William Patterson, CA 94928

Bill Uriarte, CA 94928

Connie Varela, CA 94928

Latonia Wilson, CA 94928

Radha Blackman, CA 94930

Derek Johnson, CA 94930

Maureen Kroll, CA 94930

Larry Norall, CA 94930

Ashley Simon, CA 94930

Genevieve Sollecito, CA 94930

Gwen Wilson, CA 94930

Harry Boatright, CA 94931

Barbara Drago, CA 94931

Marilee Maertz, CA 94931

Ellen Miller, CA 94931

Janice Miskel, CA 94931

Deborah Prince, CA 94931

cindy wespestad, CA 94937

Monica Dehghan, CA 94939

Bugra Bakan, CA 94941

Christine Brandt, CA 94941

Jack Clapper, CA 94941

David Crockett, CA 94941

Melissa Damore, CA 94941

Sandra Godwin, CA 94941

Karen Henry, CA 94941

Margie Herman, CA 94941

Linda Lam, CA 94941

John Levin, CA 94941

Andrew Mcwhorter, CA 94941

Marina Multhaup, CA 94941

Lauren Parsons, CA 94941

Fredric Sherman, CA 94941

Allison Youngling, CA 94941

Ben Zelazny, CA 94941

Melissa Armoza, CA 94945



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Francesca Bell, CA 94945

Scott Kohn, CA 94945

Tamami Tokutake, CA 94945

Meredith Vecchio, CA 94945

Silverman Lj, CA 94947

Karen Lynch, CA 94947

Karen Marks, CA 94947

Pauline Ridyard, CA 94947

Heather Sargent, CA 94947

Clive Burton, CA 94949

Macgregor Goodhart, CA 94949

Marcia Mclean, CA 94949

William Schultz, CA 94949

Erica Blaauw, CA 94952

Elenoa Komaisavai, CA 94952

Laurie Roth, CA 94952

Linda Book, CA 94954

Whitney Charles, CA 94954

Janet Fauerso, CA 94954

Stephanie Fuelling, CA 94954

Deb Haynes, CA 94954

Rickie Marecek, CA 94954

Saundra Parrett, CA 94954

Nancy Raw, CA 94954

Martha Frankel, CA 94956

Ann Griffin, CA 94956

Kristi Patterson, CA 94956

Terri Boutwell Boutwell, CA 94960

Michael Clark, CA 94960

Cara Derham, CA 94960

Paige Dickow, CA 94960

Angie Flynn, CA 94960

jane hall, CA 94960

John Lacy, CA 94960

Benhur Mesfin, CA 94960

Cynthia Rangaves, CA 94960

Kevin Spera, CA 94960

Elizabeth King, CA 94965

Aisha Stephenson, CA 94965

Jack Freckmann, CA 94973

Douglas Blaisdell, CA 95003

Robert Burkhart, CA 95003

Joseph Crossen, CA 95003

John Kelbert, CA 95003

Thomas Millman, CA 95003

Chris Scalzo, CA 95003

Dan Barnett, CA 95005

Roger Dunn, CA 95005

Erin Rogers, CA 95005

Heather Vinson, CA 95006

Sandra Harrington, CA 95008

Ricardo Herrera, CA 95008

Susan Rhodes, CA 95008

Amr Salahieh, CA 95008

Tena Taormina, CA 95008

Christine Weng, CA 95008

Catherine Dobbins, CA 95010

Mary Reilly, CA 95010

Deborah Secrest, CA 95010

Mary January, CA 95014



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Babu Nott, CA 95014

Umesh Patil, CA 95014

Don Sun, CA 95014

Mariah Waite, CA 95014

Gerry Gerringer, CA 95018

Eric Welty, CA 95018

Alan Kabert, CA 95020

Ygnacia Rivas, CA 95020

Carol Tolbert, CA 95020

Lawrence Turk, CA 95020

Glynis Crabb, CA 95023

David Pollard, CA 95023

Sue Tatro, CA 95023

Alison Brewer, CA 95030

Kimberli Doty, CA 95030

Deborah Goldsmith, CA 95030

Jennifer Shepherd, CA 95030

Maryellen Burr, CA 95032

Tracey Fisher, CA 95032

Mft Maxwell, CA 95032

Pamela Price-Hawley, CA 95032

Sharon Roth, CA 95032

Michael Turpin, CA 95032

William Adams, CA 95033

Robert Boatright, CA 95033

Denise Devlin, CA 95033

Lee Simmons, CA 95033

Matthew Baltar, CA 95035

Ronald Harris, CA 95035

Rebecca Jacobs, CA 95035

Thuy Le, CA 95035

Anthony Miller, CA 95035

Wendy Stegeman, CA 95035

Karen Caruana, CA 95037

Joseph Charfauros, CA 95037

Orlando Davisson, CA 95037

Richard Overstreet, CA 95037

Brenda Sass, CA 95037

Anna Jenkins, CA 95046

Andrea Beswetherick, CA 95050

Rachelle Couture, CA 95050

Sherry Ernst, CA 95050

donna gatson, CA 95050

Amy Gies, CA 95050

Kim Gray, CA 95050

Barbara Hartman, CA 95050

Kellan Mcnamara, CA 95050

Benjamin Williams, CA 95050

Theresa Bashyam, CA 95051

David Holmby, CA 95051

David Ilumin, CA 95051

Adi Ogle, CA 95051

Derrick Chang, CA 95054

Mark Shimrock, CA 95054

Larry Smith, CA 95054

Karen Berlin, CA 95060

Mckenna Booth, CA 95060

Wendy Chapman, CA 95060

Roger Emanuels, CA 95060

Elizabeth Hagan, CA 95060



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Stephen Kleshinski, CA 95060
Laurie Longenecker, CA 95060
Margaret Nelson, CA 95060
Rebecca Nolan, CA 95060
Donald Payne, CA 95060
Lelah Riccio, CA 95060
Diane Sipkin, CA 95060
Caroline Spurgin, CA 95060
Craig Venable, CA 95060
Chris Wentzien, CA 95060
Susan Zevanove, CA 95060
Armando Arias, CA 95062
William Farrington, CA 95062
Russell Frye, CA 95062
Robin Lysne, CA 95062
Claudio Perez, CA 95062
Julia Pinsky, CA 95062
Heidi Rielly, CA 95062
Anita Sandman, CA 95062
Susan Walton, CA 95062
William Wright, CA 95062
Jonathan Fox, CA 95064
Shankari Patel, CA 95064
Lee Ritscher, CA 95064
John Laurent, CA 95066
James Hopkins, CA 95070
Christine Hurd, CA 95070
David Scott, CA 95070
Alayne Meeks, CA 95073
Bruno Casillas, CA 95076

Michael Cruddas, CA 95076
LOIS HAGEN, CA 95076
Patti Jadrich, CA 95076
Victor Kimura, CA 95076
Barbara Knapp, CA 95076
Lee Rhoades, CA 95076
Berta Rodriguez, CA 95076
Robert Shacklett, CA 95076
Cristina Kochevar, CA 95077
Sandra Jackson, CA 95101
Keith Berger, CA 95110
Amanda Georges, CA 95110
Kevin Hughes, CA 95110
Richard Saunders, CA 95110
Jason Syu, CA 95110
Rochelle Velazquez, CA 95110
Robert Hatch, CA 95111
Joel Wachs, CA 95111
Lori Gilliar, CA 95112
Una Mendoza, CA 95112
Katherine Mirassou, CA 95112
Armando Cabrales, CA 95116
Phuc Le, CA 95116
Olympia Williams, CA 95116
Marty Brill, CA 95117
Stephen Hartzell, CA 95117
Rosario Herrera, CA 95117
Charles Beazell, CA 95118
Gloria Brown, CA 95118
Jill Levy, CA 95118



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Thomas Logan, CA 95118

Medhat Matter, CA 95119

Sherri Enzmingier, CA 95120

Patricia Lockyer, CA 95120

Robert Murua, CA 95120

Pollyanna Pixton, CA 95120

Lisa Vasquez, CA 95120

Lisa Ayala, CA 95121

Tho Nguyen, CA 95121

Elizabeth Shaw, CA 95121

Le Tan, CA 95121

Kimberlee Cowan, CA 95123

Marcia Harper, CA 95123

Gbvivek Li, CA 95123

Rowena Pelczynski, CA 95123

Elizabeth Tritch, CA 95123

Sharlene Valencia, CA 95123

Zachary Vaughn, CA 95123

Zonia Caceres, CA 95124

Fernando Chavez, CA 95124

Mark Jansen, CA 95124

Heather Peters, CA 95124

Jennifer Petroff, CA 95124

Anette Reeves, CA 95124

David Sylvia, CA 95124

Jeromy Carssow, CA 95125

Denise Cranney, CA 95125

Larry Engstro, CA 95125

Mahmoud Gahrahmat, CA 95125

Julianita Maestas, CA 95125

Erin Sarpa, CA 95125

Sonja Scheelke, CA 95125

Benjamin Trumbull, CA 95125

Lindsey Adams, CA 95126

Fernando Chavez, CA 95126

Gregory Cohen, CA 95126

Frank Farris, CA 95126

Cecila Macias, CA 95126

Stephanie Taylor, CA 95126

Zeenat Vastrad, CA 95126

Laura Gambelin, CA 95127

Hossein Akbari, CA 95128

Rick Grassadonia, CA 95128

Candice Piper, CA 95128

Virginia Wilson, CA 95128

Akruti Gupta, CA 95129

Roseanne Becher, CA 95130

Amanda Micheli, CA 95130

Linda Kitchen, CA 95131

Erik Sanjurjo, CA 95132

Dominique Yarritu, CA 95132

Laura Bader, CA 95133

Greka Badilla, CA 95133

Elena Cacace, CA 95134

Cheryl Culclager, CA 95134

Susan Kincaid, CA 95134

Lawrence Tutino, CA 95134

Renee Delacruz, CA 95136

Douglas Easley, CA 95136

Rolwin Lewis, CA 95136



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

John Villasenor, CA 95136

Yvonne French, CA 95138

Daphne Renelle, CA 95139

Jessica Lucas, CA 95148

Minda Vasquez, CA 95148

Halle Weingarten, CA 95148

David Saltman, CA 95150

Thomas Shephard, CA 95201

Cristina Villalvazo, CA 95203

James Mason, CA 95204

Dana Murdock, CA 95204

Ernest Vasti, CA 95204

Jose Duran, CA 95206

Walter Hastings, CA 95206

Oscar Hernandez, CA 95206

Becky Teberg, CA 95206

Helen Botiller, CA 95207

Paulette Castellanos, CA 95207

Cole Elliott, CA 95207

Rachel Lee, CA 95207

Ksybella Pope Sears, CA 95207

William Siegel, CA 95207

Cynthia Summers, CA 95207

Michael Gilayeneh, CA 95209

Evelyn Ryan, CA 95209

Gay King, CA 95210

Salvador Yadao, CA 95210

Joseph Cartagenas, CA 95212

William Fattarsi, CA 95219

Clinton Lukeroth, CA 95219

Damali Robertson, CA 95219

Thomas Cahill, CA 95223

Traci Adams, CA 95240

Michael Robinson, CA 95240

Randy Reeves, CA 95242

Charnette Boylan, CA 95249

Jessica Lindahl, CA 95257

Camilo Soto, CA 95301

Crystal King, CA 95305

Tanya Edwards, CA 95307

Margi Tanner, CA 95311

Thomas Bundy, CA 95316

Jamie Sims, CA 95320

Doral Gonzales, CA 95322

Julie Wilcox, CA 95327

Kathryn Gomes, CA 95336

Allen Wittenberger, CA 95336

Ron Bledsoe, CA 95337

John Hulbert, CA 95338

Jennifer Anderson, CA 95340

Janet McCabe, CA 95340

Juan Villegas, CA 95340

Doreen Kuneck, CA 95341

Rebecca Graves, CA 95348

Lynn Kateley, CA 95348

Norene Austin, CA 95350

Vernon Hartwell, CA 95350

Ami Mishler, CA 95350

Randy Sanchez Landa, CA 95350

Leticia Venegas, CA 95351



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Michael Abbott, CA 95354

Lisa Arnold, CA 95354

Regina Brennan, CA 95354

Emanuel Cardoso, CA 95354

Minerva Perez, CA 95354

Margaret Beck, CA 95355

Karole Britton, CA 95355

Wendy Bryson, CA 95355

Paula Crowther, CA 95355

Mark Wilbur, CA 95355

Carol Bulman, CA 95356

Jeri Johnson, CA 95356

Hugo Patino, CA 95356

Phillip Somers, CA 95356

Jerry Weimer, CA 95356

Eugenia Bentayeb, CA 95360

Lauren Noble, CA 95361

Leanne Baker, CA 95366

Misael Avila, CA 95367

Mike Jackson, CA 95367

Patrick Webster, CA 95368

Roy Bartholomew, CA 95370

Emily Branscum, CA 95370

Carol Mckee, CA 95370

Lavada Sullivan, CA 95370

Julie Harris, CA 95372

DAWN BILL, CA 95376

Anna Dearlove, CA 95376

Dave Groves, CA 95376

Vicki Ramirez, CA 95376

Ralph Jones, CA 95377

Keith Loche, CA 95377

Teri Hines, CA 95380

Kathleen Tullio, CA 95382

Catherine Jones, CA 95383

Chelsea Horvath, CA 95386

Javier Soliz, CA 95391

Randi Cornwall, CA 95401

Heather Hardcastle, CA 95401

Donna Parker, CA 95401

Lynn Sarrade, CA 95401

Viorica Sebestin, CA 95401

Ronald White, CA 95401

Charles Hughes, CA 95402

Pamela Benz, CA 95403

Kim Marbury, CA 95403

Carol Pagal, CA 95403

Sheila Robinson, CA 95403

Laurelyn Andrew, CA 95404

Jane Campbell, CA 95404

Susan Gentile, CA 95404

Dennis Goodrow, CA 95404

Kelly Jenkins, CA 95404

Lawrence Natalini, CA 95404

Jennifer Vala, CA 95404

Kevin White, CA 95404

Michael Wilde, CA 95404

Peggy Albright, CA 95405

Sally Downs-Phoenix, CA 95405

Amy Forlan, CA 95405



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Keith Hallock, CA 95405

Nadenia Newkirk, CA 95405

Wayne Seden, CA 95405

Diana Rae, CA 95407

Renate Fassbender, CA 95409

Patricia Holladay, CA 95409

Frank Longoria, CA 95409

Alan Schackman, CA 95409

Paul Schwartz, CA 95409

Andrea Weinstein, CA 95409

Kaytlin Bennett, CA 95421

Karen Walker, CA 95436

Mary Desautels, CA 95437

Charles Fleischman, CA 95437

TIMOTHY HALL, CA 95437

Timothy Perry, CA 95437

Norma Watkins, CA 95437

Lana Karhu, CA 95444

Antoinette Lang, CA 95445

Paul Mcknight, CA 95446

Katherine Lacy, CA 95448

Garrick Maul, CA 95448

Bonita Munoz, CA 95448

Elizabeth Schuiling, CA 95448

Sharon Stinson, CA 95448

Sally Weed, CA 95448

paul carlsen, CA 95451

Robert Laubach, CA 95451

Kathleen Shanklin, CA 95452

Hedy Montoya, CA 95453

Barbara Mccoid, CA 95461

Lorin Mcclendon, CA 95464

Lori Platt, CA 95470

Diane Estrin, CA 95472

Kevin Kraynak, CA 95472

Devra Newhouse, CA 95472

Christopher Orsine, CA 95472

Gregory Bowman, CA 95476

Carlile Breeze, CA 95476

colleen carrano, CA 95476

Kimberly Enzensperger, CA 95476

Susan Lucas-Conwell, CA 95476

Rene Parker, CA 95476

Charles Williams, CA 95476

Adrienne Doss, CA 95492

Gary Johanson, CA 95492

Shirley Jones, CA 95492

Scott Snow, CA 95492

Crista Truex, CA 95501

Robert Pitts, CA 95503

Jill Williams, CA 95503

Charles Dory, CA 95519

Ashley Kane, CA 95519

Scott Sway, CA 95519

Virginia Rogers, CA 95521

Marian Bogdanyi, CA 95536

Emily Silver, CA 95536

Pamela Bellah, CA 95540

Michael Thompson, CA 95542

Pamela Lutchen, CA 95554



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jason Hachtel, CA 95562

Brian Dadisman, CA 95567

Karen Dillon, CA 95567

Fran Cvitkovich, CA 95570

Ellen Drury, CA 95570

Patricia Strepy, CA 95570

Joan Beesley, CA 95602

Thomas Neary, CA 95602

Nicolas Bellanca, CA 95603

Barbara Grandstaff, CA 95603

Glen Kramer, CA 95603

Helen Melick, CA 95603

Claude Davis, CA 95604

Terre Davis, CA 95604

Robyn Pask, CA 95604

Brian Belluomini, CA 95608

Tawasky Carter, CA 95608

Jamie Elverum, CA 95608

Sally Lee, CA 95608

George Leidy, CA 95608

Russell Lobue, CA 95608

Barbara Owens, CA 95608

Terry White, CA 95608

Linda Coffman, CA 95610

Pamela Rubitsky, CA 95610

Daniel Anderson, CA 95616

Helen Barbe, CA 95616

Carol Biancalana, CA 95616

Leslie Gordon, CA 95616

Rebecka Hagerty, CA 95616

Robert Halferty, CA 95616

Gautam Jagannath, CA 95616

Nancy Kirk, CA 95616

Barbara Renwick, CA 95616

Laura Routh, CA 95616

Charla Salcido, CA 95616

Sylvia Sensiper, CA 95616

Marilyn Stratton, CA 95616

Steven Weiss, CA 95616

Marian Zingaro, CA 95616

Colleen Clancy, CA 95618

James Danzer, CA 95618

Anett Evans, CA 95618

Joseph Green, CA 95618

Elaine Bishop, CA 95620

Katherine James, CA 95620

Miguel Oropeza, CA 95620

James Stevens, CA 95620

Linda Moffatt, CA 95621

Karen Perry, CA 95621

Georgia Tardy, CA 95621

Stephanie Batey, CA 95624

John Camarra, CA 95624

Erin Dant, CA 95624

David Quecke, CA 95624

Michael Radam, CA 95624

James Walls, CA 95624

Javier Lerma, CA 95626

Sandra Reed, CA 95627

Lynn Rolston, CA 95627



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Benny Barrios, CA 95628
Albert Cheung, CA 95628
Carrie Culver, CA 95628
Darius Davenport, CA 95628
Karen Hallagan, CA 95628
Kathy Kilpatrick, CA 95628
Susan Neal, CA 95628
David Neff, CA 95628
Coleman Newell, CA 95628
Jonathan Sachs, CA 95628
Kirsten Votaw, CA 95628
Dianna Batt, CA 95630
Soyab Huseinbhai, CA 95630
Frank Jacobs, CA 95630
Patrick Kelly, CA 95630
James Marsh, CA 95630
Michele Smith, CA 95630
John Thomas, CA 95630
Laural Hockenson, CA 95633
Charlyn Parker, CA 95638
Cheryl Bozzie, CA 95640
Jacqueline Butler, CA 95648
Leslie Cappelletti, CA 95648
Robert Christopherson, CA 95648
Theodore Cohen, CA 95648
B Franks, CA 95648
Susan Hannah, CA 95648
Patricia Malberg, CA 95648
Donald Rives, CA 95648
Leslie Uyeno, CA 95648

Brooke Allison, CA 95650
Janis Jones, CA 95650
Michael Neal, CA 95650
Pamela Richards, CA 95650
Patrick Sayer, CA 95650
Dana Stone, CA 95650
Gloria Omania, CA 95651
Lorraine Osborn, CA 95660
Janis Arredondo, CA 95661
F Chalmers, CA 95661
Paul Fisher, CA 95661
Joyce Frederick, CA 95661
Sheryl Gray, CA 95661
Kia Hatch, CA 95661
Brooke Whitlock, CA 95661
Lynn Yamamoto, CA 95661
Dan Durrant, CA 95662
Judy Elston, CA 95662
Brett Pittman, CA 95664
Jacob Rosano, CA 95664
Mary Hickcox, CA 95665
William Dye, CA 95666
Shirley Trent, CA 95666
Susan Turner, CA 95666
Julie Collier, CA 95667
Alison Gimpel, CA 95667
Mark Thoma, CA 95667
Michaele Beebe, CA 95670
Dale Hatt, CA 95670
Jane Pearce, CA 95670



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Mary Purvis, CA 95670

Mary Yaryan, CA 95670

Owen Davies, CA 95672

Cheryl Abernathy, CA 95673

Jennifer Wells, CA 95674

Lana Gartin, CA 95677

Jill Matney, CA 95677

Mary Pitcher, CA 95677

Melinda Wetzel, CA 95677

Ellen Debachriley, CA 95678

Donald Hall, CA 95678

Cheri Jump, CA 95678

Pamela Lundgren, CA 95678

Helane Seikaly, CA 95678

Sylvia Escobar, CA 95682

Patricia Felten, CA 95682

Diane Shoff, CA 95682

Sally White, CA 95683

James Perry, CA 95685

Teresa Cospier, CA 95687

Daunna Harris, CA 95687

Denise Peebles, CA 95687

Joyce Pippen, CA 95687

Richard Potts, CA 95687

Megan Kaufman, CA 95688

Mark Richard, CA 95688

Derek Backus, CA 95691

Terri McCall, CA 95691

Brad Pedersen, CA 95691

Barbara Winter, CA 95691

Reuben Schilling, CA 95694

Deanna Petersen, CA 95695

Robert Pratt, CA 95695

Christine Russell, CA 95695

Lori Shaw, CA 95695

Jennifer Cantrell, CA 95701

Adrienne Arnold, CA 95722

Carol Bellamy, CA 95722

Michael Vonada, CA 95726

Cynthia Weight, CA 95741

Cindy Colosimo, CA 95742

Marcia Hager, CA 95742

Patricia Williams, CA 95742

Kristy Muller, CA 95746

Mona Reyes, CA 95746

Leanna Wedel, CA 95746

Rebecca Acosta, CA 95747

Anne Barrett, CA 95747

Susan Edie, CA 95747

Julie Galliano, CA 95747

Chinnaian Jawahar, CA 95747

Christopher Kent, CA 95747

Kathleen Maccoll, CA 95747

Jaclyn Moreno, CA 95747

Beverly Nesmith, CA 95747

Janine Preston, CA 95747

Frankie Schesser, CA 95747

Kim Anderson, CA 95758

John Caldwell, CA 95758

Rydell Gibson, CA 95758



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Jen Teyler, CA 95758

Olivia Willis, CA 95758

Ross Woodman, CA 95758

Aaron Anderson, CA 95762

Mary Lou Gattuso, CA 95762

Lauren Gould, CA 95762

Rhonda Grider, CA 95762

Vikki Lewis, CA 95762

Cassandra Aceves, CA 95765

Susan Andrews, CA 95765

Kathleen Doerr, CA 95765

Kenneth Lembach, CA 95765

Tom McMahon, CA 95765

Richard Riley, CA 95765

Noreene Shaffer, CA 95765

David Kumar, CA 95776

Dennis Wilson, CA 95798

Gil Caravantes, CA 95811

Philip Harvey, CA 95811

Benjamin Lesenana, CA 95812

Monique Polk, CA 95812

Jacob Whitaker, CA 95812

Sherri Cizad, CA 95814

Arnold Holm, CA 95814

Karen Lemmons, CA 95814

John Weems, CA 95814

Katherine Craig, CA 95815

Lindsay Bennett, CA 95816

Patrice Davis, CA 95816

Janet Geiger, CA 95816

Walter H. Loving Iii, CA 95816

Barb Thalacker, CA 95816

Eric Waddell, CA 95816

Chris Weare, CA 95816

Haley Williams, CA 95816

Robert Yee, CA 95816

Judy Brush, CA 95818

Janet Cassie, CA 95818

Phoebe Celestin, CA 95818

Aaron Stillwell, CA 95818

William Aguirre, CA 95819

Kathleen Cook, CA 95819

Connie Emerson, CA 95819

Wayne McGuirt, CA 95819

Kristina Palmer, CA 95819

Paul Hanson, CA 95820

Dale King, CA 95820

Samantha Ramsey, CA 95820

Sasha Wisotsky, CA 95820

Margaret Hodo, CA 95821

Patricia Lawson, CA 95821

Deniece Radan, CA 95821

Joan Batie, CA 95822

Matthew Carrigan, CA 95822

terri clark, CA 95822

Myriam Levy, CA 95822

Zak Venegas, CA 95822

Daniel Weitzman, CA 95822

Dayle Thompson, CA 95823

Frank Torres, CA 95824



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Mary Bear, CA 95825
Jerry Beeler, CA 95825
Linda Budd, CA 95825
Diane Delaney, CA 95825
Penny Ellison, CA 95825
Polly Kleinberg, CA 95825
Tim Reese, CA 95825
Julia Winston, CA 95825
Bibiana Alvarez, CA 95826
Brenda Heath, CA 95826
Linda Moulton, CA 95826
Gary Pennington, CA 95826
Cherise Zufelt, CA 95826
Sharon Craig, CA 95828
Maria Dedet, CA 95828
Victoria Mcilwain, CA 95828
Dale McKinney, CA 95828
Sara Mira, CA 95828
Elizabeth Adams, CA 95829
Johnny Chong, CA 95829
Erika Hughes, CA 95829
Charles Martin, CA 95831
Rella Remedios, CA 95831
Suzanne Thompson, CA 95831
Justin Wentzel, CA 95831
Susan Williams, CA 95831
Theresa Lose, CA 95832
Daniel Albert, CA 95833
Alain Conder, CA 95833
Sue Considine, CA 95833

Gina Dasilva, CA 95833
Justin Kennedy, CA 95833
Victor Mora, CA 95833
John Cronin, CA 95834
Roy Harrell, CA 95834
Mark Thorsell, CA 95834
Mark Viviano, CA 95834
Raymond Cadei, CA 95835
Alverta Harty, CA 95835
Bonnie March, CA 95835
Tammy Pappas, CA 95835
Susan Persons, CA 95835
Madalynn Rucker, CA 95835
Merry Gaskill, CA 95838
Michael Obrien, CA 95841
Lauren Musgrove, CA 95842
Ellen Read, CA 95842
Kathleen Rubin, CA 95842
Melissa Macias, CA 95843
Rob Woods, CA 95843
Robert Yount, CA 95843
Ayanna Crenshaw, CA 95852
Robyn Delong, CA 95864
Autumn Finnerty, CA 95864
Leslie Holzman, CA 95864
Mary Huttner, CA 95864
Gabriel Maiol, CA 95864
Hattie Bains, CA 95901
Denise Bays, CA 95901
Shelley Lehman, CA 95918



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Sylvie Allione, CA 95926

Barbara Bertapelle, CA 95926

Teresa Gisske, CA 95926

John Martin, CA 95926

Lynn Millon, CA 95926

Susan Prescott, CA 95926

Genevieve Smith, CA 95926

Richard Snodgrass, CA 95926

Gary Wilson, CA 95926

Darin Bolt, CA 95928

Rebecca Brunelli, CA 95928

Sonya Huss, CA 95928

Michelle Mcgivern, CA 95928

Cameron Pearson, CA 95928

Traci Burnham, CA 95937

Sharon Deal, CA 95945

Ella Lerche, CA 95945

Laura Morton, CA 95945

Terence Young, CA 95945

Lindsey Buis-Kelley, CA 95947

Susan Ingrey, CA 95947

Victor Doherty, CA 95949

Brian Kilcourse, CA 95949

Laura Mcnaughton, CA 95949

Patricia Loera, CA 95951

Linda Evans, CA 95953

Anita King, CA 95954

Sue Mcclinton, CA 95954

Jonathan Blinder, CA 95959

Stephanie Howerton, CA 95959

Marilyn Mociun, CA 95959

Tammi Taber, CA 95961

Terry Fountain, CA 95963

Linda Waddell, CA 95966

Robert Melera, CA 95968

David Nemat-Nasser, CA 95973

Melissa Wheeler, CA 95977

Ryan Mc Kindles, CA 95981

Jana Rigsby, CA 95991

Lynn Arp, CA 95993

Doug Gibbs, CA 95993

Marilyn Scott, CA 95993

Kathleen Lowrance, CA 96001

Nelda Mayo, CA 96001

Sara Nichols, CA 96001

Ashley Raimondi, CA 96001

Anna Ratner, CA 96001

Tammi Garber, CA 96002

Angelica Huerta, CA 96002

Keith Brookshaw, CA 96003

Jacquelyn Carr, CA 96003

Constance Laughlin, CA 96003

Keith Melton, CA 96003

Kim Tyler, CA 96003

John Hayes, CA 96007

Dalton Boecking, CA 96019

Debbie Bailey, CA 96022

Kathryn Richards, CA 96022

Toni Wyro, CA 96032

Valerie Allison, CA 96067



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Karen Holmes, CA 96067

Jill Phillips, CA 96067

Paula Bibb, CA 96073

Kenneth Towle, CA 96073

Patricia Heiman, CA 96094

Randall Peterson, CA 96094

Martin Rosen, CA 96109

Barbar Bannar, CA 96150

Abby Pappenfus, CA 96150

Hailey Brewer, CA 96161

Carrie Haines, CA 96161

Ahrin Koppel, CA 96161

Violet Nakayama, CA 96161

James Wiesner, CO 92024

Janel Jung, IA 94107

Beth Rimanoczy, IN 948

Sandra Obrien, Anchorage, AK

Mela Arevalo, Juneau, AK

Lola Collins, Anniston, AL

Zakia Kator, Corona, AL

Roxanne Moran, Harrison, AR

Rita Redmond, Avondale, AZ

Jay Luna, Phoenix, AZ

John Stoneham, Prescott, AZ

Michelle Garcia, Prescott Valley, AZ

John Harrison, Scottsdale, AZ

Leslie Janik, Surprise, AZ

Catherine Studer, Tucson, AZ

Thomas Gordon, Denver, CO

Pat Kelly, Denver, CO

Torunn Sivesind, Denver, CO

Lael Mccoy, Golden, CO

Mark Selak, Parker, CO

Sarah Kincaid, Wheat Ridge, CO

Wendy Novick, Orange, CT

Jay Weinman, Redding, CT

Blair Bowie, Washington, DC

Lois Fishman, Washington, DC

Michael Kharfen, Washington, DC

Lauren Miller, Washington, DC

Betty Southard, Largo, FL

Pavelly Moure, Lehigh Acres, FL

Horacio Arce, Miami, FL

Glenn Joyner, Orlando, FL

Justina Powell, Pembroke Pines, FL

Ken Beer, Port Saint Lucie, FL

Edward Klein, Vero Beach, FL

Marilyn Saffer, West Palm Beach, FL

Alice Gray, Atlanta, GA

Kaiulani Conner, Haiku, HI

Tamara Todd, Hilo, HI

Linda Orr, Kailua Kona, HI

Elissa Kline, Hailey, ID

Sherry Chandos, Chicago, IL

John Garcia, Chicago, IL

Maureen Graves, Chicago, IL

Melissa Bailey, Columbus, IL

Jeffrey Scott, Granite City, IL

Robyn Donaldson, Hazel Crest, IL

Raymond Ryals, Libertyville, IL



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

David Fox, Wheaton, IL
Lilian Hsu, Amherst, MA
Matthew Dixon, Boston, MA
Jasi Walker, Boston, MA
Kori Hitchcock, Brookline, MA
Srivatsa Manjunath, Chelmsford, MA
Susana Carranza, Melrose, MA
Jeanne Markel, Osterville, MA
Jack Cheng, Waban, MA
Stefanie Moore, Baltimore, MD
Sangeetha Menon, Columbia, MD
Jim Arney, Ellicott City, MD
Paul Sivak, Parkville, MD
Susan Buck, Rockville, MD
Scott Jacobs, Takoma Park, MD
Heidi Turner, Calais, ME
Steven Shane, South Portland, ME
Gregory Fox, Ann Arbor, MI
Judy Rodrigues, Belmont, MI
Cheryl Vaughn, Brighton, MI
Michelle Moustakas, Canton, MI
Kate McClanaghan, Detroit, MI
Julio Marquez, Mount Pleasant, MI
Michael Cohen, Royal Oak, MI
Lisa Jacobs, Springport, MI
Eva Bagen, Eden Prairie, MN
Brian Breheny, Minneapolis, MN
Pearce Bunting, Minneapolis, MN
Alex Sachs, Kansas City, MO
Juanita Hennessey, Durham, NC

Justin DeWaele, Wilmington, NC
Katrina Church, Winston Salem, NC
Kathleen Matz, East Hampstead, NH
Jonathan Stephenson, Lyndeborough, NH
Thomas Jesse, Wilton, NH
Melissa Campbell, Millburn, NJ
Kanan Gubins, Moorestown, NJ
John Fasone, Verona, NJ
Judy Acereto, Albuquerque, NM
Lance Hurtubise, Albuquerque, NM
Sarah Levalley, Albuquerque, NM
Emily J Stafford, Albuquerque, NM
John Fleischhauer, Corrales, NM
Arthur Barcinas, Santa Fe, NM
Marilyn Hood, Las Vegas, NV
Judith Anderson, Reno, NV
Valli Camiller, Verdi, NV
Omari Smith, Beacon, NY
Richard Knapp, Bronx, NY
Ray Dantuono, Brooklyn, NY
Ben Graney, Brooklyn, NY
Brandon Hall, Brooklyn, NY
Jason Weiss, Brooklyn, NY
Patty Cornell, Cazenovia, NY
Ronald Zumwalt, Chappaqua, NY
Richard Loftus, Cooperstown, NY
Carolyn Ramsay, New York, NY
Kelly Ford, Saint Albans, NY
Charles Knight, Seneca Falls, NY
Carolyn Abbey, Columbus, OH



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Christopher Burgess, Columbus, OH

Joyce Wagner, Dayton, OH

Jennifer Mariotti, Bend, OR

Edward Ehrhart, Eugene, OR

Ann Mounce, Grants Pass, OR

Kelly Villarreal, La Pine, OR

Sean Becker, Lake Oswego, OR

Caitlin French, Lake Oswego, OR

Tammy Carpenter, Portland, OR

Emily Howell, Portland, OR

Evan Ingle, Portland, OR

Patricia Iwata, Portland, OR

Kathryn Kucinski, Portland, OR

Ann Lyon, Portland, OR

Soohyen Park, Portland, OR

David Samuels, Portland, OR

Joseph Sharp, Portland, OR

Sally Travi, Portland, OR

Martin Vazquez, Portland, OR

Idabelle Fosse, Salem, OR

John Saffell, Tarzana, OR

Richard Colisch, Tualatin, OR

Judith Terry, Veneta, OR

Barbara Tabler, West Linn, OR

Travis Beller, Allentown, PA

Carl Griffin, Downingtown, PA

Jaime West, Greensburg, PA

Peter Dualacher, Havertown, PA

Kim Allen, Norristown, PA

Joyce Leasher, North Wales, PA

Jenny Littleton, Richboro, PA

M. Colette Plum, Rutledge, PA

Linda Hoffman, Telford, PA

Brian Houghtaling, Wellsboro, PA

LEROY BENNETT, Middletown, RI

Laurie Masterson, Warwick, RI

Maria Guillen, Bluffton, SC

Natilee Duning, Brentwood, TN

Ian Salter, Clarksville, TN

Lesley Wood, Knoxville, TN

James Nicol, Aledo, TX

Madelyn Bernstein, Austin, TX

Darryl Crawford, Austin, TX

Jessica Lorenzana, Austin, TX

Joe Nation, Austin, TX

Kristen Schumacher, Bandera, TX

Pamela Burnham, Cedar Park, TX

Richard Robinson, Corpus Christi, TX

Aaron Weinstein, Dallas, TX

Madalyn Martinez, Denton, TX

Michael Patton, Flatonia, TX

Pandora Angelisanti, Harker Heights, TX

Mason Jones, Lubbock, TX

Victoria Glass, McAllen, TX

David Schwartz, Sachse, TX

Pam Fox, San Antonio, TX

William Sibley, San Antonio, TX

Ed Nobis, Salt Lake City, UT

Elissa Smith, Alexandria, VA

Jerry Turney, Midlothian, VA



3435 Wilshire Blvd., Ste. 385
Los Angeles, CA 90010
(213) 251-3688

Danielle Sorahan, Vienna, VA

Jane Riedel, Orwell, VT

James Mackinnon, Richford, VT

Anne Bower, S Pomfret, VT

Caroline Coker Mckie, Bainbridge Island, WA

Michael Rosenthal, Bainbridge Island, WA

Pat Schaechter, Bellevue, WA

SHARYN MARTIN, Bellingham, WA

Larry Hejny, Grants Pass, WA

Andrew Struck, Kent, WA

Eric Simila, Kingston, WA

Turner Erin, Kirkland, WA

Chris Diehl, Mercer Island, WA

Karen Crum, Poulsbo, WA

Kevin Bertrand, Pullman, WA

Paul Jonas, Redmond, WA

Che Anselmo, Seattle, WA

Elisabeth Crabtree, Seattle, WA

David Dresser, Seattle, WA

Benjamin Park, Seattle, WA

Nina Simonds, Seattle, WA

Jonah Weikert, Seattle, WA

Lynn Johnson, Spokane, WA

Gwenvere Modica, Spokane, WA

Whitney Parker, Vancouver, WA

Kathy Wolchick, Vashon, WA

Kay Gore, White Salmon, WA

Laura Landreth, Balsam Lake, WI

Dorcas Jones, Fairfield, WI

Ruth Crump, Madison, WI

Earl Green, Madison, WI

Sam Egan, Milwaukee, WI

Alzina Davenport, Jackson, WY

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

March 14th, 2025

Re: Amendments to Petition to Modify CA Marine Protected Area Network to Enhance
Protections for California's Most Resilient Kelp Forests

Dear President Zavaleta and Honorable Commissioners,

Attached is Environment California Research & Policy Center & Azul's request to amend
Petition 2023-33MPA. We are amending four of the petition's seven actions following
conversations with community members and stakeholders.

We believe that these amendments will allow the state to balance long-term, strong protections
for stable kelp forest habitat areas with compatible community uses like shore-based subsistence
fishing, and create clarity at Natural Bridges around what uses are prohibited where.

On the following page, Table A ("Table A -- Cover message, Request to Amend Petition
2023-33MPA, Table of proposed amendments") outlines which action IDs we are seeking to
amend. Detailed descriptions of our proposed amendments and justifications can be found in
Table 2 ("Table 2-- Amendments to Petition to Modify the CA Marine Protected Area Network
to Enhance Protections for California's Most Resilient Kelp Forests"), where we have annotated
our changes in red underline and ~~black strikethrough~~. Our updated petition form, narrative and
appendix A, alongside new support letters are attached following those forms. Our request
concludes with the original support letters we submitted with Petition 2023-33MPA.

Thank you for this opportunity, and please reach out if you need any additional information.

Sincerely,

Laura Deehan
State Director
Environment California Research & Policy Center

Table A -- Cover message, Request to Amend Petition 2023-33MPA, Table of proposed amendments

Contact Organization	Petition Tracking Number	Unique Action ID	Affected MPA	MLPA Action Category (modify, establish, abolish)	Action Type	Action Category	Proposed Action	<u>Justification</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_1	Cabrillo State Marine Reserve (SMR)	Modify	Boundaries	Boundary change-expansion	Expand westward and northward by 15.2 sq mi <u>~9.99 sq mi</u>	<u>Stakeholder feedback--commercial fishers (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_2	Point Dume SMCA	Modify	Boundaries, <u>Regulations</u>	Boundary change-expansion, <u>regulatory change</u>	Expand westward by 4.6 sq mi	<u>Stakeholder feedback--recreational fishers (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_6	Natural Bridges SMR	Modify	Boundaries	Boundary change-expansion	Expand southward by 13.7 sq mi <u>14.5 sq mi</u>	<u>Stakeholder feedback--MPA collaborative (see Table 2)</u>
Laura Deehan, Environment California Research and Policy Center and Azul	2023-33MP A	2023-33MP A_7	N/A	Establish	Establish new MPA	Establish new MPA	Designate 3.2 sq mi as a new SMR <u>SMCA</u> near Pleasure Point	<u>Stakeholder feedback--recreational fishers (see Table 2)</u>

TABLE 2 - **Amendments to** Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Name	Proposed action	Brief description	Proposed regulations and boundary change	Historical context	Notes/Justification
Cabrillo State Marine Reserve (SMR)	Expand by 15.2 sq miles - 9.9 sq mi	Large patches of dense, stable kelp forests exist along a large stretch of coast along Point Loma to the north of the very small existing SMR. Expansion is compatible with Cabrillo SMR's current goal to "protect diverse kelp forest, surfgrass, sandy seafloor, and intertidal and nearshore rocky reef habitat". Approximately 1,000,000 people visit the area annually which provides access to the ocean for thousands of school children and other groups. Recreational and subsistence fishing is common here.	No change in regulations. Maintain existing eastern and southern boundaries. Shift the western boundary to the edge of state waters per state MPA design and size guidelines, and shift the northern boundary to a visible geographic landmark at New Hope Rock, such as the collection of buildings north of Building 609 Swordfish Point to bring resilient kelp beds along the western shore of Point Loma within MPA protections. The new proposed boundaries would form straight lines, follow the mean high tide line, and follow the state waters boundary from the current southeast corner of the SMR to approximately the following coordinates: - Southwest corner: 32° 66.223' N lat. 117° 30.345' W long. - Northwest corner: 32° 72.639' N lat. 117° 34.664' W long. 32° 42' 12.7188" N lat. 117° 18' 53.5788" W long. Northwest corner: 32° 72.639' N lat. 117° 34.664' W long. 32° 42' 12.7188" N lat. 117° 15' 20.3976" W long.	This area was initially included in a large proposed SMR ("Point Loma SMR", Proposal C) in recognition that this is an area of greater biological diversity than other areas. However, the state opted for a reserve far smaller than the science-based minimum size guidelines to avoid conflict with fishing grounds offshore.	To balance kelp forests protection with recreation and low-impact subsistence fishing, we are willing to consider the creation of a new SMCA alongside the existing SMR that allows for recreational hook-and-line fishing and spearfishing. <u>Following conversations with local stakeholders, we are proposing a smaller reserve that will still protect areas of stable kelp forest while allowing for local commercial lobster fishing north of New Hope Rock</u>
Point Dume State Marine Conservation Area (SMCA)	Expand by 4.6 sq mi	A large, dense, resilient kelp bed is located immediately west of the current SMCA's boundaries. We propose a small expansion of the SMCA to protect this important kelp bed. Currently, the SMCA protects nearly 16 square miles of sandy beach and seafloor habitat, rocky shores, kelp forests, surfgrass beds, an upwelling zone, and less than a quarter square mile of deep submarine canyon, which together create an area of high biodiversity. This SMCA also provides for excellent surfing, diving, tidepooling, and whale watching opportunities.	No change in regulations. Propose allowing recreational take from shore by hook and line and spearfishing. Shift the western boundary to the edge of El Sol County Beach to bring the highly resilient patch of dense kelp forest just west of the current SMCA into MPA protection. The proposed new western boundary forms a straight line extending southward from the mean high tide line to the 3 nm state waters limit at approximately the following coordinates: - Northwest corner: 34°0413' N lat. 118°9063' W long. - Southwest corner: 33°9899' N lat. 118°9063' W long.	The kelp beds within the proposed expansion area were part of a historic SMP proposal ("Lechuza SMP", Proposal C) that sought to protect these persistent kelp beds along the Malibu Coast. This proposed SMP was not taken up by the state at the time, likely in favor of designating the Point Dume SMR/SMCA complex just to the east and to maintain spacing guidelines. In addition, the Point Dume SMR/SMCA boundaries were placed to the west of Point Dume in order to leave waters to the east of the point open/unprotected to accommodate for heavy commercial and recreational use - suggesting that the western side of the point was seen as less desirable for commercial and recreational interests.	- The Santa Ynez Band of Chumash Indians are exempt from this SMCA's take regulations - it is a culturally important area - Petition 2023-14MPA, submitted by the California Sea Urchin Commission, proposes to expand take even further by allowing for the commercial take of urchins within this SMCA. - Except for the petition above, FGC meetings and staff summary Nov/Dec notes show no complaints submitted by fishing interests in the Point Dume region <u>We recieved requests from recreational fishers that this change would increase access for subsistence fishing and we feel this approach balances recreation and kelp conservation.</u> <u>We would also be open to allowing recreational hook and line and spear fishing from non-motorized watercraft, should there be a legal pathway to creating that form of exemption</u>
South Point SMR	Expand by 26.3 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. The stretch of coastline to the northwest of South Point SMR on Santa Rosa Island contains one of the largest contiguous resilient kelp beds on the islands. The SMR currently protects around 13 square miles of ocean habitat including rocky reefs, sandy seafloor, surfgrass beds, and small patches of highly resilient kelp forests. Expansion would help to bring the large stretch of resilient kelp bed to the northwest under MPA protection, and is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here". This area is remote and only accessible via boat. Backcountry beach camping along the South Point SMR shoreline is permitted from September 16 through December 3.	No change in regulations. Shift the western boundary of the SMR to the westernmost tip of Santa Rosa Island with protections extending south to the 3 nm state waters limit, bringing a large, contiguous patch of resilient kelp forest along the southwest coastline under MPA protections. The new western boundary should form a straight line extending south, connecting the island's westernmost tip and the 3 nm state waters limit at approximately the following coordinates: -Northwest corner: 34°0013' N lat. 120°2507' W long. -Southwest corner: 33°938' N lat. 120°2507' W long.	South Point SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	Santa Rosa Island is a traditional home of the Chumash Located where warm water currents from the tropics and cold water currents from Alaska converge = ecologically rich and important area
Gull Island SMR	Expand by 1.8 sq mi	The Northern Channel Islands contain some of the largest remaining resilient kelp beds in state waters, although large portions of the islands have experienced die-offs and are rated as "high priority" sites by Ospina-Giraldo et al. 2023. A small area of unprotected coastline to the northwest of Gull Island SMR contains highly resilient kelp beds worth protecting. Expansion is compatible with the SMR goal to "protect the rocky reef, kelp forest, sandy plain habitat found here".	No change in regulations. Shift the northern boundary of the SMR to the mean high tide line along the southwest coastline of Santa Cruz Island, to bring the highly resilient kelp beds at Posa Anchorage under MPA protection. The new northern boundary should follow the mean high tide line until it joins with an extension of the existing western boundary, at approximately 34°000' N lat.	Gull Island SMR was established as one of the 13 Channel Islands MPAs in 2003 and re-established with no changes as part of the state MPA network in 2012.	

TABLE 2 - Amendments to Petition to Modify the CA Marine Protected Area Network to Enhance Protections for California's Most Resilient Kelp Forests

Point Conception SMR	Expand by 14.6 sq mi	A very large patch of resilient kelp forest exists just outside the current eastern boundary of Point Conception SMR. Ospina-Giraldo et al 2023 identified this patch as having a lower risk of future losses compared to nearby kelp patches, and being valuable for natural regeneration and long-term monitoring ("cluster 2" in Hypothetical Use Case #4). Data from an existing shore-based radar system that has been deployed at the site since 2020 shows the area immediately east of the currently MPA appears to be used largely for transit, rather than fishing. Access to this area is currently limited, allowing for additional protections to confer high conservation value while minimizing socioeconomic impacts.	No change in regulations. Maintain existing western and southern boundaries, and shift eastern boundary westward between Arroyo San Agustin and Canada de la Agujas beaches to bring the large resilient kelp bed to the east of Point Conception SMR within MPA protections. The new eastern boundary should form a straight line between the mean high tide line and the 3nm state waters boundary at approximately the following coordinates: -Northeast corner: 34°45' N lat. 120°3445' W long. -Southeast corner: 34°40' N lat. 120°3445' W long.	The proposed expansion area appears to have been initially included in a larger proposed SMR during the MLPA planning process (South Coast Proposal C) in recognition of this area's biological and oceanographic importance. The rationale for the smaller current boundaries for Point Conception SMR is unclear from the historical documents provided.	Ecologically rich and important to Indigenous Chumash people The remoteness of its location makes it one of the least-visited mainland marine protected areas (MPAs) along California's south coast
Natural Bridges SMR	Expand by 13.7 sq mi <u>~14.5 sq mi</u>	Multiple patches of resilient kelp forest exist just offshore from the current SMR boundaries. The original intent of this SMR was to protect the intertidal zone from tidepooling and shore fishing while leaving skiff fishing unimpacted. However, increasing climate impacts, the critical condition of the state's kelp forests, and strong public support for expanded protections, warrant a reevaluation and expansion of this SMR to protect these highly resilient kelp beds and newly vulnerable marine populations.	No change in regulations. Maintain existing western and eastern boundary, <u>shift eastern boundary to encompass Natural Bridges State Beach</u> and shift southern boundary out to the 3nm state waters limit to protect the resilient kelp beds and deeper habitats and pelagic waters per CDFW design and feasibility guidelines, as well as recently published peer-reviewed guidelines for climate-resilient MPA design (Arafeh-Dalmau et al. 2023).	The Natural Bridges SMR was designed as an intertidal SMR, specifically to avoid socio-economic impacts. The preferred option of siting a SMR that extends to greater depth range (as identified in the IDC proposal) was not pursued in an effort to reduce socio-economic impacts by avoiding siting SMRs adjacent to Santa Cruz harbor.	Proximity of Santa Cruz Harbor to other ports, many fishermen travel within and beyond the region to conduct their fishing activities. <u>We would consider a southern boundary that is closer to shore, like near the continental shelf, if the state receives feedback to indicate such a change would better balance conservation with fishing interests.</u> <u>Santa Cruz MPA collaborative had identified this expansion as option that would clarify and reduce confusion around permitted uses at the state beach.</u>
Pleasure Point SMR- SMCA	Designate ~3.2 sq mi	A large, dense patch of resilient kelp forest exists just off Pleasure Point. The kelp beds of the northern Monterey Bay are some of the largest and most persistent in the state. This area in particular is a well-known and popular surfing location, with little commercial fishing taking place (pers. comms H. Nevins) and minimal recreational hook-and-line fishing and spearfishing occurring when surf conditions are flat. There are strong access points to the area, many educational and recreational opportunities, and a growing, colloquially named "shark park" nearby as the presence of juvenile white sharks increases. See letter from H. Nevins in Appendix B detailing the broader conservation value of the area.	We propose a <u>State Marine Conservation Area</u> no take SMR to protect this large kelp forest from all most destructive and extractive activities. Proposed regulations are as follows: <i>"It is unlawful to injure, damage, take, or possess any living, geological, or cultural marine resource with the following exceptions: recreational take from shore by hook and line and spearfishing."</i> Proposed boundaries range from the northeastern edge of Trees Beach along the mean high tide line to the tip of Soquel Point. From the mean high tide line, the proposed boundary extends south (offshore) by 2.5 sq mi, in keeping with CDFW design guidelines and recent peer-reviewed guidelines for climate-resilient MPA design recommending a variety of habitats and depth ranges be represented within an MPA (Arafeh-Dalmau et al. 2023). While this area would not meet the state's minimum size guidelines, we recognize the importance of this area for recreational fishing and believe a strategically placed MPA of this size would protect as much of the kelp forest as possible while minimizing economic impact	We acknowledge the deliberate effort during the MLPA planning process to avoid siting MPAs near recreational access areas to allow for small vessels and kayaks to access fishing opportunities. However, in light of changing conditions, the extreme and significant losses of kelp cover over the past 10 years, and strong public support for additional protections, increased protections are warranted for this last remaining, resilient kelp area. Sufficient access remains for recreational use in immediate vicinity.	To balance kelp forest protection with recreation and low-impact subsistence fishing, we are <u>proposing a new</u> willing to consider a new Pleasure Point SMCA that allows for <u>shore-based</u> recreational hook-and-line fishing and spearfishing. In addition, to better protect the ecologically rich and biologically important waters of Soquel Cove nearby, we strongly suggest the state consider designating a larger State Marine Park (or State Marine Conservation Area allowing for all recreational activities) alongside, or in tandem with, the Pleasure Point detailed here for enhanced recreational and ecological

From: Mike Beanan <[REDACTED]>
Sent: Friday, March 14, 2025 10:41 AM
To: FGC <FGC@fgc.ca.gov>
Cc: Ashcraft, Susan@FGC <[REDACTED]>
Subject: Petition 2023-24-R

Hi,

Please add my comments for the record in evaluating Petition 2023-24-R.

Thank you,

Mike Beanan

Laguna Bluebelt Coalition

[Laguna Bluebelt - Working Together for a Healthy Ocean](#)

[Laguna Bluebelt - Working Together for a Healthy Ocean](#)

Working Together for a Healthy Ocean. Support our New Marine Reserves Your support is critical if they are to succeed.

www.lagunabluebelt.com

Mike Beanan, Co-founder, Laguna Beach Coalition

Thank you for including us in the process to evaluate and, hopefully, approve Petition 2023-24-R to protect all of Laguna Beach's Marine Life.

Based upon stakeholder input, we have submitted a Revised Petition offered as a compromise to support and ease near shore enforcement along one, common latitude line. The original petition followed Laguna Beach's City Limits extending southwesterly from the shoreline. This made the determination of the offshore boundary difficult according to participants at a recent stakeholder meeting hosted by the Orange County Marine Protected Area Collaborative in Dana Point. While there is some debate about who made the suggestion, which led to an unfortunate misunderstanding, the revised petition before you is a smaller SMCA No Take than originally requested but still protects kelp and essential fish habitats.

When evaluating the Petitions, I suggest we comply with and enhance the goals of the Marine Management Plan by increasing the coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage with full citywide protection. Fortunately, Laguna's unique MPAs have dramatically improved recreational, educational and study opportunities provided by marine ecosystems through coordinated enforcement by Marine Safety Lifeguards, Park Rangers and community volunteers working together to minimize human disturbance. Petition 2023-4-R is consistent with all of the goals for the Marine Management Act and legislative intent of the Marine Life Protection Act of 1999.

I am not unfamiliar with economic challenges. I grew up in a large working class family in Northern California surfing the cold, wild waves while diving for abalone with my brothers off of Gualala and Mendocino or fishing mountain lakes. Leaving high school and to avoid the draft, I joined the Navy, studied navigation and was assigned to SEAL Team One, as a Platoon Sergeant and sent to Vietnam. Turning 21, I got out, worked my way through college and earned a degree in Biology before being hired as Assistant Dean at UC Irvine to manage veteran programs. One of my first projects was a pioneering Handicapped Scuba Project for wheelchair veterans and others...now a worldwide opportunity for the physically challenged community to enjoy and explore underwater wonders.

I continue now to swim and free dive Laguna's remarkable MPAs while traveling and Scuba diving other MPAs. I encourage FGC staff and commissioners to visit and swim Laguna's MPA and see large Sheepshead and robust kelp forests free of sea urchin barrens.

As a Californian, I feel an opportunity and responsibility to protect and restore our natural heritage - an abundant ocean teeming with sea life. Please consider approving the Laguna Bluebelt's Petition 2023-24-R as part of your legacy for California's sea life protection.



From: Jeanne Sparks <[REDACTED]>

Sent: Thursday, March 13, 2025 07:08 PM

To: FGC <FGC@fgc.ca.gov>

Cc: Sandy Aylesworth <[REDACTED]>; SBCAN <[REDACTED]>

Subject: SUPPORT FOR PETITION 2023-28MPA

I am sending a letter from Santa Barbara County Action Network supporting the proposed Pt. Sal State Marine Reserve. Please distribute to the commission.

Thank you,

Jeanne Sparks

Co-Executive Director

Santa Barbara County Action Network

[REDACTED]

www.sbcan.org

[REDACTED]





BOARD OF DIRECTORS

Lawanda Lyons-Pruitt
Co-President North
Dick Flacks
Co-President South
Gale McNeeley
Secretary
Jonathan Abboud
Treasurer
Janet Blevins
Alhan Diaz-Correa
Carla Frisk
Robert Gibson
Jaime Tinoco
Stanley Tzankov

ADVISORY COUNCIL

Rich Appelbaum
Spencer Brandt
Gerry DeWitt
Lee Heller
Christina Hernandez
David Landecker
Gail Marshall
Sharyne Merritt
Harvey Molotch
Karen Shapiro
Das Williams

STAFF

Jeanne Sparks
Co-Executive Director
Ken Hough
Co-Executive Director
Nancy Avoce
Assistant Director

SANTA BARBARA COUNTY ACTION NETWORK

P.O. Box 6174
Santa Maria, CA 93456
info@sbcn.org
www.sbcn.org
Facebook.com/SBCANorg
805.563.0463

March 14, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814
fgc@fgc.ca.gov

Re: Support for Petition 2023-28MPA

Dear President Zavaleta and Honorable Commissioners:

Santa Barbara County Action Network supports the proposed Point Sal State Marine Reserve (Petition 2023-28MPA) near the city of Guadalupe. Conserving this special area will help protect and restore ocean health, enhance coastal recreation experiences, and help ensure Santa Barbara County's coastal economy thrives for decades to come. SBCAN urges you to approve this proposal.

The Point Sal MPA would conserve an important habitat that supports rich biodiversity, such as kelp forests, rocky reefs, tidepools, sandy beaches, migratory whale corridors, an important larval retention zone, and a seabird and sea lion rookery. Protecting this area would have positive impacts that spread beyond its boundary, bolstering ocean resilience and keeping our coastal waters healthy. This area holds cultural significance for several Indigenous communities in our region. Designating this MPA would honor and strengthen the Chumash peoples' stewardship of the area and elevate their historical and present-day connection to the region.

In addition, this area holds special importance for ocean and coastal recreation communities. Point Sal is home to stunning coastal bluff trails that are frequented by local hikers and tourists to view wildlife, relax at the beach and enjoy the remote and pristine area. By making the ocean healthier and more resilient to climate change, strong marine protections help preserve everyone's ability to enjoy these areas through a variety of recreational activities, far into the future. This also benefits our economy – collectively, ocean-based recreational activities contribute to our state's \$28 billion ocean tourism and recreation economy. In 2023, coastal tourism brought just over \$2 billion in travel-related spending to Santa Barbara County and supported more than 20,000 jobs.

The Commission's continued work to protect our state's biodiversity is critical at a time when ocean conservation is more important than ever. Thank you for the opportunity to express our strong support for these proposals that aim to fill a current gap in network design to improve ecological connectivity throughout the region, provide additional resilience in the face of climate change, and protect critical marine habitats.

Sincerely,

Jeanne Sparks, Co-Executive Director

Ken Hough, Co-Executive Director



City of Guadalupe
Administration Department
918 Obispo Street
P.O. Box 908
Guadalupe, CA 93434

Rec'd
CALIFORNIA
FISH AND GAME
COMMISSION
4/3/2025

March 18, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95817

Re: Letter of Support for Petition 2023-28-MPA

Dear President Zavaleta and Honorable Commissioners,

I am writing to express my support for Petition 2023-28-MPA, which would designate a new marine protected area (MPA) off the coast of Point Sal. As a lifelong resident and current mayor of Guadalupe, the closest city to Point Sal, I believe this new MPA will benefit our community and safeguard a cherished natural space for the residents of Guadalupe and visitors to our area.

I have been coming to Point Sal since I was a young boy. Like many other community residents within the Santa Maria Valley, the Point Sal area and the waters identified in the proposed Point Sal Area, believe that this protection is necessary to protect and enhance the waters residents have enjoyed for decades. This designation will protect the Point Sal MPA for generations to come. Located at the convergence of two major ocean currents, the highly productive waters around Point Sal are home to kelp beds, rich tidepools, and a diversity of marine life including humpback whales, gray whales, sea lions, seals, sea otters, seabirds, and more. Many residents of Guadalupe frequent the trails to Point Sal overlooking the coast to view wildlife, relax at the beach, and enjoy the remote and pristine area. When it was accessible, many in our community would visit Point Sal State Beach to spend time with family and enjoy the shore. This area is important to my community, my neighbors, and my constituents. Ensuring that we protect it for future generations aligns deeply with the City of Guadalupe's values.

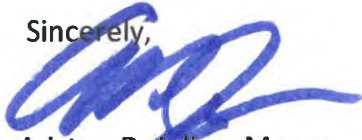
The Central Coast's world-famous coastline is a biodiversity hotspot for marine life and attracts visitors from around the world. In 2023, tourism brought just over \$2 billion (about \$6.2 per person in the US) in travel-related spending to Santa Barbara County and supported more than 20,000 jobs. Continuing to build and strengthen our tradition of ecotourism is a priority of the City of Guadalupe. Our local economy believes that this MPA designation will enhance tourism for our area in collaboration with the Guadalupe Dunes Non-Profit, the Guadalupe Business

Association, Inc., as well as the Santa Maria Valley Chamber of Commerce. Acting to secure ocean protections now will help our local economy stay vibrant in the long run – ultimately supporting the many local businesses and tourism operations that rely on healthy landscapes and seascapes.

Further, the City of Guadalupe acknowledges and supports the importance of Chumash people's historic and contemporary connection to this place. Historically, Point Sal holds cultural significance for the Chumash people, with evidence of habitation as far back as 4,800 years ago. Chumash artifacts are visible throughout Point Sal, and analyses of burial sites from the area demonstrate the rich cultural ties to the traditional stewards of this land. The city was proud to support the recent designation of the Chumash Heritage Marine National Sanctuary, and we are pleased to support this proposal that honors and protects culturally significant waters for the Chumash people.

We commend the continued work of the Commission to advance the conservation of our state's valuable and unique marine resources. Designating a protected area at Point Sal will further bolster the strength of California's MPA network, support local communities and businesses, and safeguard our coastal ecosystems for future generations. Thank you for your consideration of this petition, and the opportunity to submit recommendations for the adaptive management of California's MPA network as part of the Decadal Management Review process.

Sincerely,



Ariston D. Julian, Mayor
City of Guadalupe

From: [REDACTED]
Sent: Sunday, March 16, 2025 01:43 PM
To: FGC <FGC@fgc.ca.gov>
Subject: 2023-29MPA Mishopshno State Marine Conservation Area

ATTN: Fish & Game Commission

My name is William Ray, from Carpinteria, CA. I'm writing to you today with comments about 2023-29MPA: Mishopshno State Marine Conservation Area.

I am writing to express my strong opposition to the proposed Marine Protected Area (MPA) designation for Carpinteria Reef. As a graduate student at UCSB specializing in benthic ecosystem research, I dive at Carpinteria Reef approximately 100 times per year and have firsthand knowledge of its ecological health and the role it plays in the local community. The arguments presented in favor of this MPA lack scientific justification and fail to consider the significant negative impacts it would have on the residents who rely on this area for subsistence fishing, research, and recreation.

Lack of Scientific Justification for MPA Designation

Proponents of the MPA claim that it will provide protection for juvenile white sharks. However, white sharks are already illegal to fish in California, making additional protections redundant. There is no evidence to suggest that an MPA would enhance their conservation beyond existing regulations.

Additionally, arguments citing "spillover effects" for commercially and recreationally important species such as lobster and rockfish are scientifically flawed in this context. Spillover effects occur when protected populations expand into adjacent fishable areas, but Carpinteria Reef is one of the only accessible reef structures in this section of coastline. With no significant adjacent reef habitats, the premise that an MPA here would enhance fisheries through larval dispersal or adult migration is unsupported. Furthermore, local hydrodynamics at Carpinteria Reef differ from other regional sites; currents here are primarily tide-driven rather than advection-based, making claims of larval transport benefits highly questionable.

Disproportionate Impact on Underrepresented Communities

Carpinteria is a diverse community, home to one of the largest and most densely populated

Hispanic populations in the Tri-County area. Many low-income families depend on this reef as a vital source of fresh, sustainable protein, particularly given the high cost of living. Restricting access to this resource would disproportionately impact these underrepresented communities while providing no demonstrated ecological benefit.

Additionally, while the proposal emphasizes increasing access for Native American communities, it does not explain how restricting public access achieves this goal. True inclusivity should focus on increasing opportunities for all local communities, not implementing exclusionary policies.

Sincerely,

William Ray

From: Kyle Murphy <[REDACTED]>

Sent: Sunday, March 16, 2025 07:44 PM

To: FGC <FGC@fgc.ca.gov>

Subject: 2023-29MPA: Mishopshno State Marine Conservation Area

ATTN: Fish & Game Commission

My name is Kyle Murphy, from Carpinteria, CA. I'm writing to you today with comments about 2023-29MPA: Mishopshno State Marine Conservation Area.

It is upsetting to hear about the proposed area between Carpinteria and Summerland becoming a Marine Conservation Area. This beautiful coastline with accessible reef structures close to shore offers the closest experience one can take part of in relation to the Channel Islands. If you don't own a boat like myself, Carpinteria reef specifically, is the closest experience of spearfishing/diving one can take part of with its offered kelp forest, rocky reef substrate, and diverse marine ecosystem. Carpinteria reef is an important resource to myself and my community. It allows for one to be in touch with nature in which one can forage their own food under the proper restrictions and guidelines implemented by Fish and Game. I take pride in myself and others who go out of their way to forage for food locally versus buying fish/invertebrates from the store, not knowing where they came from, not knowing if they were fished sustainably, and not knowing if they were marinated in chemicals/preservatives to extend their shelf life. Myself and others treat our next meals with the upmost respect.

Unfortunately, there are no other nearby reefs on this whole coastline that are accessible with the "spill over" benefits of this MPA. In terms of the juvenile white sharks needing protection, these marine vertebrates are already illegal to fish, so they don't need more protecting. I'm definitely for support of Tribal co-management of this area, however, increasing the access for one community doesn't have to be by excluding all the other users.

I hope you take my comments of this matter into consideration for not making this area into an Marine Conservation Area.

From: Branislav Radibratovic <[REDACTED]>

Sent: Wednesday, March 12, 2025 10:00 PM

To: FGC <FGC@fgc.ca.gov>

Subject: 2023-33MPA - Specifically Cabrillo SMR expansion

Providing you with perspective of an avid surf fisherman, living in San Diego. And focusing on the proposed Cabrillo SMR expansion. Hope you'll find this argument honest, logical and specific, not a political pamphlet or an industry opinion.

What does fishing mean to me? A way of life, metal therapy, physical exercise (at the age of 54 my running and gym days are over). I can honestly not imagine my life without fishing.

What I think about California Marine Protective areas? I love them as they are. Together with all the fishing regulations they provide sustainable fishing supply for me to enjoy. Without them, there would not be many fish around.

Why I am protesting Cabrillo SMR expansion? We all know: 10-20% of spots hold 80-90% of fish. In my case, surf-fishing for halibut and calico bass happens only in areas with reef and kelp. Currently in San Diego County most of those areas are already protected. An exception is Sunset Cliffs area north of the existing Cabrillo SMR. The proposed expansion would eliminate the last significant piece of fishable reef in San Diego county.

In reality, most of that area is not approachable on foot. So, if you would move the boundary of new proposed area 1.5 miles south of Swordfish Point (proposed north boundary), no objective surf fishermen would complain.

I hope you consider the above in your deliberation. Below, I am adding some thoughts, that are not mine, and I expect you have already heard those many times. Never the less, I agree with them, and wanted to repeat them.

Equity argument: most people cannot afford boats; many cannot pay to fish on commercial boats. What is left for them is shoreline.

Environmental impact of shoreline fishing is negligible:

- It covers sliver strip of water near the shore.
- No electronics is used to locate the fish.
- Fish is released most of the time. Since started shore fishing, I have released > 95% of my catch. Boat fishing creates waste, spearfishing creates waste too.

It is really a valid argument that opening shoreline to fishing in all protected area would not impact habitat recovery and would help to many of us that count on fishing to improve quality of our lives.

Brian Radibratovic, PhD

From: California Surf Fishing <[REDACTED]>

Sent: Saturday, March 1, 2025 07:18 AM

To: FGC <FGC@fgc.ca.gov>

Subject: Sign-On Letter for the Mishopshno SMCA

Greetings! This is Kaspar Kazazian from www.californiasurffishing.net. After engaging with communities through the following outreach methods, we express support for the Mishopshno SMCA.

1. We worked with all of the Mishopshno petition co-sponsors as well as Fish On Conservation to build a consensus.
2. We had conversations with 6 experienced shore fishermen who frequently fish the Carpinteria area and are familiar with the different fishing areas. These were trusted individuals, many that we already knew as local fishermen and have fished with numerous times. Coupled with our knowledge of fishing the area over the years, we obtained a complete picture of what fishermen fish for in each of the beaches in the SMCA. We aim to respect all types of low impact fishing in this SMCA: Subsistence fishermen (croakers and perch at Carpinteria Beach and Santa Claus Beach), halibut fishermen (in the mixed sand and reef of Padaro / Loon Point, mostly catch and release), inlet fishermen (by Sand Point, for stripers, etc), Kayak fishermen (at the nearby offshore Carp Reef).
3. Through our social media page, we obtained ~1,000 signatures for fishermen's support of shore fishing in SMCA's, such as the Mishopshno SMCA:
<https://www.change.org/p/allow-shore-fishing-in-smca-s>
4. We support the petition to create the Mishopshno SMCA for the following reasons:
 - Meet original scientific MPA connectivity guidelines by filling the gap that currently exists. We believe that filling this MPA connectivity gap will increase fish populations, benefitting both fishermen and the fish.
 - Of all types of ocean fishing, recreational shore fishing and kayak fishing offer the lowest cost, the easiest access, and the least environmental impact to fish / kelp forests. From an equity perspective, shore fishing can be enjoyed by a diverse range of communities who are within driving distance to the coastline. We believe that allowing recreational shore fishing and kayak fishing in SMCA's is in alignment with the state's Marine Life Protection Act (Goal #3 for recreation) and MPA Decadal Management Review (Recommendation #7 & #9 for equity & accessibility).
 - The creation of this highly protected SMCA (in alignment with low impact fishing gear

criteria per the MPA Guide User Manual) will strengthen the state's MPA network, per state goals, including 30x30.

Sincerely,

Kaspar Kazazian

California Surf Fishing

www.californiasurffishing.net



From: Blake Hermann <[REDACTED]>

Sent: Wednesday, February 26, 2025 08:17 AM

To: FGC <FGC@fgc.ca.gov>; Ashcraft, Susan@FGC [REDACTED];
Shuman, Craig@Wildlife [REDACTED]

Subject: Comment on Bin 2 MPA Petition evaluation process

Hello all,

See attached comment letter requesting and supporting previous comments that petition be evaluated under the MPA Master Plan(s), most notably the guiding regional objectives under the MLPA goals from the Master Plans.

Letter additionally breaks down the Master Plan's objectives in the scope of Petition2023-15MPA specifically, highlighting why petition should be considered. This is all referencing the most recent revised version of the petition submitted in January.

Thank you,

Blake Hermann

Petitioner - Petition2023-15MPA

Guiding the Petition process through the MPA Master Plan's Regional Objectives under the MLPA Goals, and Petition 2023-15 MPA's support under said Goals and Objectives

To the FGC and MRC,

The adaptive management process of the MPA network through the petition process has been an all encompassing process stretching nearly two years and has consisted of many meetings with stakeholders from a multitude of backgrounds across the State.

Currently, several stakeholders have differing views on and are determining under what venues to discuss bin 2 petitions. Personally, I do not mind MRC or full commission discussions, but do see benefits to possibly holding discussions at both. This way we could benefit from the more casual open floor of the MRC and still keep all commissioners involved and informed on these petitions to gain the best final actions on these petitions from the full commission.

That being said, one commonality throughout this process from all groups has been the calling for the analysis process to be explicitly guided by the existing MPA Master Plan's (MMP) adaptive management process. This calling has come from all sides, from recreational and commercial fishing organizations such as AllWaters, CFSB, CCA, and the American Sportfishing Anglers (ASA), to environmental NGOs like Azul, Environment California, Environmental Defence Center, the NRDC, and WILDCOAST. The latter eNGOs were among 17 groups who jointly signed and sent a letter to the FGC explicitly stating to guide the process through the MMP and its objectives in January.

The MMPs are a framework that guides the adaptive management process of the MPAs as that was part of their original intention. The process guided by the MMP lays out a clear analysis path through lists of "objectives" that fall under the six broader goals of the MLPA. These objectives under the six MLPA goals are what the MMP uses to determine if an MLPA goal is met, as the objectives are, "more specific and measurable than the broader MLPA goals," according to the MMP. In order to best determine if an MLPA goal is met, we look at these objectives stated under the regional MMP and determine if the objective is satisfied using the best available science/data. This process is laid out in Chapter 4.5 of the 2016 MMP, and the measurable objectives under each MLPA goal can be found in the regional appendices (C-F) in the suitably named "Regional Goals and Objectives" sections of the MMP.

I would not only like to echo all comments from both sides of the aisle to guide the process through the MMP(s) and their objectives, but to also bring up that Petition2023-15MPA is one of, if not, the only petition with explicitly stated support in the MMP objectives (see Goal 2 Objective 4 (2.4) below). This stated support of Petition2023-15MPA is laid out by not only the more-modern 2016 MMP, but even the original MMP from 2008, showing a historic, scientifically based rationale for Petition2023-15MPA, that came after the designation of the Northern Channel Islands Network. This shows our obligation to update this pre-MMP island network to modern standards we see in our coastal network that better follows these underlining MMP objectives.

The remaining sections of this document will go through all of the six goals of the MLPA (bold), the guiding MMP regional objectives under each MLPA goal (numbers), and provide a breakdown response of the specific objective through the scope of Petition2023-15MPA (letters). For context, Petition2023-15MPA is requesting 3 SMRs at the Northern Channel Islands be modified to SMCAs to allow for the limited take of Highly Migratory Species (HMS) or pelagic finfish, listing a variety of different allowable gear options, 6 in total not including additional possible nearshore/offshore MPA configurations. The core rationale of the petition is, we know the benefits of MPAs on HMS/pelagic species are very low compared to the high burden certain local MPA networks, in this case the Channel Islands, place on HMS/pelagic fisheries, and that we see pelagic allowances everywhere else but not in the older Channel Islands network where pelagic allowed areas should arguably be the most prevalent.

MLPA Goal 1. To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.

1. Protect and maintain species diversity and abundance consistent with natural fluctuations, including areas of high native species diversity and representative habitats.
 - a. The three MPAs in the petition and their locations are not intrinsically unique to HMS/pelagic finfish due to their highly migratory nature. The migratory nature of these species and the vast area of water they cover shows clear evidence that any take of HMS or pelagic finfish within these MPAs will not significantly affect HMS or pelagic finfish abundance any more than what existing fishery pressure already exerts on these species outside of the MPAs. Additionally, pelagic and HMS fisheries are all offshore, open-water fisheries, and are non-bottom contact. This means any effect on representative habitats containing a diverse spread of species on bottom reefs or nearshore kelp forests will be minimal due to

fishing simply not occurring there, still protecting those species that benefit from MPAs the most.

We already see this in use outside of the Channel Islands Network in the more-modern coastal network that came under the state driven MLPA implementation process. Nearly 40% of the coastal network allows for some form of limited, mostly pelagic, take and still protects those species and habitats that benefit from the protection, the pre-MMP/MLPA Channel Islands only has 3.5%.

2. Protect areas with diverse habitat types in close proximity to each other.
 - a. As the petition prefers only HMS take being allowed, the alternative being a pelagic finfish allowance, the only habitat type affected by this change will be open water. Pelagics and HMS are open water targeted species, one rarely sees billfish or tunas targeted even remotely nearshore let alone in a kelp forest or shallow reef. The unique habitats inside the three MPAs such as kelp forests or rocky reefs will see little to no change in relative level of protection. Even the bottom areas of the three MPAs, which consists of mostly empty mud flats thousands of feet deep, will see no meaningful change in its protection as nearly all HMS or pelagic effort is done at or near the surface or in the mid-water, rarely deeper than 100ft. If needed, the petition also includes options further restricting bottom contact gears outright, but again HMS and pelagic effort mostly avoids the bottom in general.
3. Protect natural size and age structure and genetic diversity of populations in representative habitats.
 - a. The species that live inside these MPAs year-round that gain the most from them are nearshore species living in the shallow-nearshore sections of the MPAs, or are groundfish frequenting the bottom habitat nearshore and offshore on rocky reefs. This fact is stated in the 2008 MMP appendix G which describes what species benefit the most from MPAs and why. As these non-pelagic, local species are predominantly found in these nearshore habitats, and not in open water where HMS and pelagics are found, all of these local, non-pelagic species can expect their populations and genetic diversities to be unaffected by this change. HMS or pelagic species would of course experience some form of take; however, as previously mentioned, levels of take within these areas would not be any different from the surrounding open area and would not be in levels affecting their population structures within the MPA.

4. Protect biodiversity, natural trophic structure, and food webs in representative habitats.
 - a. The amount of HMS or pelagic finfish in these areas is not expected to be significantly higher than the surrounding open area due to their migratory nature. Because of this, the overall trophic structure and food webs of the area will not be significantly affected as any interactions with these HMS or pelagic species will still be present as they move in and out of the area on the currents. The existing protections on local, non-pelagics will remain, leaving the remaining levels of the web unchanged.

While some argue pelagic fisheries can just work around the closures, around the Channel Islands because of the higher closure rates, the federal offshore expansions, naval closures, and weather restrictions around the islands make pelagic fisheries are significantly more constricted. Allowing limited pelagic access inside these MPAs will benefit the fisheries not because they contain more pelagic or HMS, but because the added total available area is locally significant.
5. Promote recovery of natural communities from disturbances, both natural and human induced, including water quality.
 - a. HMS and pelagic finfish are well managed groups of fish that are in no need of recovery. In fact, the HMS fishery is one state and federal managers are actively trying to grow due to domestic lack of participation. The water quality protections within the three Channel Islands MPAs in the petition will of course still remain even if the petition is accepted in-part or fully. Additionally the Channel Islands National Marine Sanctuary water quality regulations in the entire area in and out of the MPAs will remain in effect.

MLPA Goal 2. To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.

1. Help protect or rebuild populations of rare, threatened, endangered, depressed, depleted, or overfished species, and the habitats and ecosystem functions upon which they rely.
 - a. As mentioned under Goal 1.5a, none of the HMS or pelagic finfish species that would be targeted in these three MPAs are rare, threatened, endangered, depressed, depleted, or overfished. The open water habitats they live inside will still have existing protections on the habitat. Currently, an overwhelming percentage of HMS consumed in this State are longline imports versus our cleaner hook-and-line fleets. Local swordfish and tuna

fishermen locally pick from the same stocks international longline fleets do, taking only a fraction of the stock and offering a superior grade of seafood both commercially and recreationally for personal consumption. Allowing access to these areas offers a way to meaningfully impact local fleets around the Channel Islands by providing them more water to cover while also not significantly impacting the HMS or pelagic stocks which are currently significantly more affected by international fisheries.

2. Sustain or increase reproduction by species likely to benefit from MPAs, with emphasis on those species identified as more likely to benefit from MPAs, and promote retention of large, mature individuals.
 - a. Appendix G of the 2008 MMP breaks down, on a species level, fish that benefit from MPAs the most and fish that benefit the least. The MMP states that, species benefiting from MPAs the most are local, non-pelagic species:

“MPAs are likely to have their greatest direct benefits on residential species. In general, MPAs offer direct protection to less mobile or sedentary species that locally aggregate in specific habitats (e.g., many of the rockfish species).” -Appendix G of the 2008 MMP

These local, non-pelagic species would still be protected even if this petition was accepted, still allowing for these species to benefit the most from the MPAs, and retain populations of large, mature individuals. The 2008 MMP additionally states that HMS and pelagic finfish are species that receive less if any benefits from MPAs due to sheer amount of water they cover:

“Species with a strong tendency to move will not benefit significantly from the establishment of MPAs [...] Direct benefits of MPAs are expected to be much reduced for highly migratory species (e.g., swordfish, tunas, some sharks) that likely spend relatively little time inside local coastal MPAs. Protection of these mobile species and their contributions to local marine ecosystems may best be addressed by larger-scale regulatory measures.” -Appendix G of the 2008 MMP

With the above guiding information, there is no scientifically supporting rationale to leave the three MPAs in Petition2023-15MPA completely closed to pelagics or HMS. Rather, due to the area traveled by HMS or pelagic finfish, best protective practices are seasonal restrictions, and

size/length requirements, something we already use Stateside with pelagic finfish and federally with HMS. The primary driver this petition only applies to three MPAs and not others was, unlike other no-take areas, pelagic or HMS can more than reasonably be targeted whilst meeting our protection goals in these three MPAs specifically (see Goal 2.4a below). For example, there is no reason to request pelagic or HMS access in MPAs simply too far offshore due to lack of total effort or areas too nearshore that would reasonably never offer significant amounts of pelagic or HMS opportunities because they are too shallow.

3. Sustain or increase reproduction by species likely to benefit from MPAs with emphasis on those species identified as more likely to benefit from MPAs through protection of breeding, spawning, foraging, rearing or nursery areas or other areas where species congregate.
 - a. As mentioned above in Goal 2.2a those species “likely to benefit from MPAs,” non-pelagics/groundfish, will continue to be protected including their breeding, spawning, foraging, rearing and nursery areas, including other areas where species congregate, kelp forests/rocky reefs. These respective habitats will also see little to no effect as pelagic or HMS fishing efforts rarely overlap nearshore areas, shallow, or deep water reefs. These protections still being in effect will allow individuals to grow and mature, increasing local reproduction of the species.
4. Protect selected species and the habitats on which they depend, while allowing some commercial and/or recreational harvest of migratory, highly mobile, or other species; and other activities.
 - a. This MMP objective displays the central ideas of Petition2023-15MPA, clearly stating areas like those requested in the petition be provided. The Channel Islands MPAs (which contain the three MPAs in the petition) are the oldest in the modern network and expand the furthest offshore, yet they provide the least amount of pelagic allowance in the State. The original intentions for these MPAs was protecting local, non-pelagic species, namely groundfish. The Footprint Reserve is a glowing example of this, disconnected from any mainland or island and over a deepwater reef that once was a groundfish fishing area. The MPA went in to specifically rebuild overfished groundfish populations, yet it provides no pelagic allowance. In fact, the Footprint is the only MPA in the State that is disconnected from land that does not have any type of limited pelagic allowance.

Broadly speaking, the Channel Islands network exceeds the State Network in terms of percent area in MPAs, 21% of island waters are protected compared to the State as a whole which has 16% of its waters protected. The Channel Islands are also the only network of MPAs in the State that extend 6 nautical miles offshore, twice the normal 3 nm distance offshore we see. This offshore expansion interferes more with HMS/pelagic fisheries compared to the other State MPAs that are more nearshore.

One would assume that with the higher percent of protection locally and twice the offshore interference that reasonable amounts of pelagic or HMS access would be given, yet the Channel Islands network offers the least pelagic access in the entire MPA network. Where 40% of the State MPAs have some form of pelagic allowance the Channel Islands network only provides 3.5%. While these protections were justifiable over 20 years ago when MPAs were newer, the coastal network didn't exist, the MMPs didn't exist, and less was known about MPAs and pelagic species; the two more-modern MMPs and this objective specifically are glowing examples of why we must adaptively manage the network and provide reasonable amounts of pelagic access where it is realistic as touched on above in Goal 2.2a.

MLPA Goal 3. To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbances, and to manage these uses in a manner consistent with protecting biodiversity.

1. Sustain or enhance cultural, recreational, and educational experiences and uses (for example, by improving catch rates, maintaining high scenic value, lowering congestion, increasing size or abundance of species, and protecting submerged sites).
 - a. The allowance of this petition would certainly provide decongestion of HMS or pelagic fishing areas, especially around Santa Cruz Island during Naval Activity days when most areas beyond 3nm of the island are closed and pelagic opportunity is extremely limited. Catch rates would increase relatively proportional to the included area as the MPAs do not hold significantly more or less HMS or pelagic finfish than the already open waters do. Scenic value of land based and submerged sites would not change, as HMS or pelagic fishing activity has little to no bottom contact interference and is done offshore away from the more biodiverse nearshore areas. Lastly, as mentioned, the size and abundance of local species will not change as they will still be protected, even the size and

abundance of HMS or pelagics should not vary beyond normal fluctuations due to the species covering so much area.

2. Provide opportunities for scientifically valid studies, including studies on MPA effectiveness and other research that benefits from areas with minimal or restricted human disturbance.
 - a. Within the three MPAs the petition looks at there are currently no scientific studies occurring in the midwater where limited take will be present. Occasional bottom surveys of deep water reefs occur inside and outside of these MPAs and the broader Channel Islands; however, a pelagic allowance will not affect these ROV trips or the abundance/diversities of species researchers observe on said trips (we already interact with them when they are outside of the MPAs).
3. Provide opportunities for collaborative scientific monitoring and research projects that evaluate MPAs that promote adaptive management and link with fisheries management, seabird and mammals information needs, classroom science curricula, cooperative fisheries research and volunteer efforts, and identifies participants.
 - a. If granted, this petition does open some doors for scientific monitoring of an area previously closed to everything being opened to HMS or pelagic finfish. This information could be used as part of future adaptive management cycles of the network. While ties between MPAs and fishery management still do exist, these ties have decreased in the pelagic arena for smaller MPAs and nearshore MPA networks, which is what we currently have. The key reason for this is in order for an MPA to have impact on HMS it would have to cover significant amounts of offshore ocean over multiple jurisdictions and international waters, not the nearshore waters most of our network covers. Enforcement alone of an area of that size is simply unreasonable which is why HMS fisheries are managed under size, quantity, and quota limits, not MPAs.

MLPA Goal 4. To protect marine natural heritage, including protection of representative and unique marine life habitats in South Coast California waters, for their intrinsic value.

1. Include within MPAs key and unique habitats identified by the SAT for this region.
 - a. The SAT identified several key and unique habitats to be included in the Southern California section. All of these habitats concern unique bottom structures or substrates and nearshore features like kelp forests. The primary habitat HMS fishing will occur is away from these habitats in open

water. Any of these unique habitats will still remain protected as HMS or pelagic effort never occurs there enough.

2. Include and replicate, to the extent possible [practicable], representatives of all marine habitats identified in the MLPA or the California Marine Life Protection Act Master Plan for Marine Protected Areas across a range of depths.
 - a. This object mirrors the previous Goal 4.1 and requests protections exist across the listed unique habitats in a variety of depth ranges. The three MPAs in Petition2023-15MPA will still have the same protections on the habitat and local, non-pelagic species that live in said habitat.

MLPA Goal 5. To ensure that South Coast California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.

1. Minimize negative socioeconomic impacts and optimize positive socioeconomic impacts for all users including coastal dependent entities, communities, and interests, to the extent possible, and if consistent with the MLPA and its goals and guidelines.
 - a. Opening these areas, to the requested levels of HMS or pelagic take the petition requests, would minimize the negative socioeconomic impacts these areas currently have while they are no-take. While total take of HMS will not increase by magnitudes, allowance of HMS take inside of the three MPAs will offer alternatives to fishermen on poor weather days due to the MPAs covering most of the consistently calm waters around the Channel Islands. This will not only help to increase local and cleaner commercial fisheries, but also offer benefits to recreational pelagic fisheries, especially catch-and-release marlin fisheries. All of this could be accomplished whilst still meeting the objectives of the MMP and protecting the species that these MPAs are meant for.
2. Provide opportunities for interested parties to help develop objectives, a long-term monitoring plan that includes standardized biological and socioeconomic monitoring protocols, a long-term education and outreach plan, and a strategy for MPA evaluation.
 - a. This objective is somewhat out of the scope of Petition2023-15MPA in this analysis; however, any possible long term monitoring of the MPAs after a change like this is encouraged to validate the claims made in this petition, and that what we see as an effect of making this change is what we expect.

3. Effectively use scientific guidelines in the California Marine Life Protection Act Master Plan for Marine Protected Areas.
 - a. I urge the department and commission to follow these guidelines and MMP objectives for this petition process, as their is their entire purpose, and to understand that Petition2023-15MPA does in fact have explicit support from the MMP and by extension the MLPA. This analysis is meant to show that Petition2023-15MPA is adhering to most, if not all, of these scientific guidelines/objectives.
4. Ensure public understanding of, compliance with, and stakeholder support for MPA boundaries and regulations.
 - a. While any limited-take area offers more complexity than a completely open or closed area, similar existing MPAs in the State that allow for pelagic take show the public can understand and follow regulations allowing take of a set list of species, pelagic finfish or HMS. Outside of MPAs, groundfish exclusion areas (GEAs), established federally, also mirror this petition by restricting only non-pelagic species take (groundfish take) but still allowing for all pelagic take displaying public understanding and enforcement feasibility.

It goes without saying that among those that frequent the Channel Islands offshore areas for pelagic species, a petition like this has complete public support. I have been on the water around these islands for 25 years, and was a part of the first generation of anglers to grow up with these MPAs in effect. Throughout these years the call to allow pelagic access in these areas has existed throughout the local community, and without this call, this massive community driven consensus, this petition would have never existed.

There are some who oppose this petition, there always will be; however, one thing I have yet to receive is a scientifically based reason for these areas to remain closed to HMS or pelagic species, all rational has been emotional. While there are research studies that show massive MPAs, those that rival the size of this State in area, may offer some benefits to pelagics, our Network simply does not and cannot accommodate that type of scale. In fact, a denied petition in 2020 by this Commission explicitly stated that on the record, when a petition requested an MPA be made for an HMS (white sharks) this commission's reply was to deny it because, "MPAs are intended to protect ecosystems, not individual species, especially highly mobile, pelagic species." This precedent has been set

multiple times, there is no reason to not apply it to a set of MPAs that were made before it all, this is a textbook example of adaptive management.

5. Include simple, clear, and focused site-specific objectives/rationales for each MPA and ensure that site-level rationales for each MPA are linked to one or more regional objectives.
 - a. The founding reasons for these MPAs at the Channel Islands in 2002 was the idea to protect our local, non-pelagic species, mainly groundfish at the time. These ideas are still reiterated today in the MPA summaries of all three of these MPAs, the focus on non-pelagic local species, birds, and mammals is clear. While the existing protections certainly can continue to accomplish that objective, Petition2023-15MPA offers a way we can both meet those same goals, and allow for some reasonable forms of take for pelagic species as we see elsewhere in the more modern MPA network. The rationales laid out in this document are evidence that under Petition2023-15MPA's changes we can still meet the same regional objectives we currently meet, plus those revolving around reasonable levels of pelagic take. These additional met objectives, and lower economic impacts make this petition one that arguably helps strengthen the overall network, not weaken it.

MLPA Goal 6. To ensure that the South Coast's MPAs are designed and managed, to the extent possible, as a component of a statewide network.

1. Provide opportunities to promote a process that informs adaptive management and includes stakeholder involvement for regional review and evaluation of management effectiveness to determine if regional MPAs are an effective component of a statewide network.
 - a. We are currently in this adaptive management process as a result of the DMR which includes stakeholder involvement at Commission and MRC meetings discussing this and other MPA adaptive management petitions. While I wish official meetings could be held regionally for petitions I understand that is not doable for this specific process. That being said, unofficial meetings where locals attended (clubs, organizations, MPA Collaboratives) feedback on this petition was overwhelmingly positive.
2. Provide opportunities to coordinate with future MLPA regional stakeholder groups in other regions to ensure that the statewide MPA network meets the goals of the MLPA.

- a. This is already being done at the full commission and MRC levels where stakeholders across the State voice thoughts on regional MPA petitions. Stakeholder support for a petition like this is what one would generally expect, local fisheries/community support, statewide support from fisheries groups/organizations, and statewide lack of support from environmental organizations. It should again be mentioned that supporting reasons for petition2023-15MPA and how it is supported by both the objective and goals of the MMP and MLPA respectively, is the purpose of this document.
3. Ensure ecological connectivity within and between regional components of the statewide network.
 - a. The Channel Islands network is unique in that it is partially isolated from the Coastal MPA network. That being said, connectivity will still be occurring under an accepted petition in part or full as existing protections on species that actually benefit from these MPAs and their habitats will still remain protected. This will keep local species connectivity as strong as it has been under the current network. Pelagic species will still have local MPAs that are no-take at all four islands, in the border network, and far offshore (but still inside the EEZ) where little or no pressure exists on them.
4. Provide for protection and connectivity of habitat for those species that utilize different habitats over their lifetime.
 - a. As mentioned in several of the above objectives, those species that utilize different habitats over their lifetime are primarily local, non-pelagic species. These species will remain completely protected. Pelagic and especially HMS are species that are in the open water, pelagic region their entire lives, from egg to maturity. All of the species proposed for limited take in Petition2023-15MPA have very limited, if any, interactions or movements between different habitats explicitly due to their life cycles.

The above analysis of the MPA Master Plan's objective based analysis process for adaptive management changes to the MPA network clearly shows that Petition2023-15MPA is supported by the MMP and the MLPA. Not only are there guiding objectives of the 2016 and 2008 MMPs that outright say we must provide areas for pelagic take and that pelagic species are less affected by MPAs, but here we have the Channel Islands network of MPAs that came into effect prior to any MMP providing almost no limited pelagic areas, nothing comparable to what we see in the more-modern coastal network that was guided by the MMP. This is a glowing example of the need for adaptive management in lieu of guiding management documents, CDFW

and FGC statements on previous petitions, and actual MPA implementations from the coastal MLPA that are based on our more-modern data and scientifically based evidence and outlook on MPAs. If I could only say one thing about this petition it would be: we can have pelagic allowed areas and our local protections without weakening the network just like we already have everywhere else. Please consider granting this petition.

Thank you,
Blake Hermann
Petitioner - Petition2023-15MPA

California Fish and Game Commission
Non-Regulatory Requests for Action — Updated April 1, 2025

CFG - California Fish and Game Commission CDFW - California Department of Fish and Wildlife
WRC - Wildlife Resources Committee MRC - Marine Resources Committee

Date Received	Name of Requestor	Subject of Request	Short Description	Category	FGC Receipt Scheduled	FGC Initial Action Scheduled	Initial Staff Recommendation
12/10/2024	Richard Charter, The Ocean Foundation	San Andreas Shellfish Company Lease Application	Requests a National Environmental Policy Act process in addition to the California Environmental Quality Act process, due to proximity and potential impacts to federal public resources within Greater Farallones National Marine Sanctuary and Point Reyes National Seashore; requests federal and UNESCO interagency review and local government review; and suggests the project area design be wider due to strong currents in the area.	Marine	2/12-13/25	4/16-17/25	The lease application is advancing through Commission and CEQA processes. Commission and CDFW staff are working directly with partner agencies of jurisdiction and the applicant on the review process. Staff is forwarding the comment to federal agencies of jurisdiction that permit aquaculture operations subsequent to Commission lease consideration. Staff has advised the commenter to reach out directly to federal agencies of jurisdiction and to UNESCO to request additional federal environmental review and interagency review. Staff has shared the letter with the applicant and consultant, highlighting the suggestion to consider a wider project area in light of strong local currents. No additional action is recommended at this time.
1/26/2025	Bernard Friedman, Santa Barbara Mariculture Company	Aquaculture Lease Amendment	Request to add the cultivation of all native algae species to the pending lease amendment request for State Water Bottom Lease No. M-653-02 (updates the company's 2021 pending request).	Marine	2/12-13/25	4/16-17/25	Staff and CDFW staff are reviewing the updated lease amendment request and will work directly with the applicant. No additional action recommended at this time.

California Fish and Game Commission Marine Resources Committee (MRC) Work Plan

Updated April 9, 2025

Note: Proposed changes to topics/timing are shown in blue underline or ~~strike-out~~ font.

Topics	Category	Nov 2024	Mar 2025	Jul 2025
Planning Documents, Fishery Management Plans (FMP)				
MLMA Master Plan for Fisheries – Implementation Updates	Plan Implementation			
Red Abalone Recovery Plan (statewide)	Recovery Plan			<u>X</u>
- Risk Tolerance for Reopening Fishery Harvest	Recovery		X/R	
California Halibut Fishery Management Review (CA Halibut Review) – CA Halibut Trawl Grounds Review	Management Review			
CA Halibut Review – Bycatch Evaluation for Trawl Gear	Management Review			X
<u>Market Squid Fishery Management and FMP Review</u>	<u>Management/FMP Review</u>	X/R		
Kelp Recovery and Management Plan (KRMP) Development	Recovery/ Management Plan	*		X
Marine Protected Area (MPA) Network 2022 Decadal Management Review Implementation: <i>MPA Petitions</i>	Management Review	X/R	*	X
Regulations				
Kelp and Algae Commercial Harvest – Sea Palm (Postelsia)	<u>Commercial Take</u>	<u>X/R</u>		
Recreational Crab Trap Gear Options and Trap Validation for Commercial Passenger Fishing Vessels	<u>Recreational Take</u>	<u>X/R</u>		
Recreational Barred Sand Bass Fishery	<u>Recreational Take</u>	<u>X/R</u>		
Recreational Red Abalone Fishery Closure Sunset Date	Recreational Take		X/R	
Commercial Coonstripe Shrimp Fishery Management	Commercial Take			X/R
<u>Commercial Bull Kelp Harvest Sunset Date</u>	<u>Commercial Take</u>		<u>X</u>	<u>X/R</u>
Marine Aquaculture and State Water Bottom Leases				
Statewide Aquaculture Action Plan	Planning Document			<u>*</u>
Status of Existing Leaseholder Requests	Current Leases		X	
Applications for New Leases	Lease Applications			
- San Andreas Shellfish Company (in Tomales Bay)		X		
- Santa Barbara Sea Ranch (off Santa Barbara County coast)			X	
Lease Best Management Practices Plans (Hold, TBD)	Leases–Regulatory			<u>*</u>
Special Projects, Informational Topics, and Emerging Management Issues				
Coastal Fishing Communities Project	MRC Project	*	*	
Kelp Restoration and Recovery Tracking	Kelp			X
Experimental Fishing Permit (EFP) Program				
Box Crab Exploratory Fishing	EFP	X		
Pop-Up Gear in State-Managed Fisheries	EFP	X		

Key: X = Discussion X/R = Recommendation and may move to Commission * = Written or oral agency update



MPA Enforcement Report

March 2025

Assistant Chief Eric Kord

Marine Enforcement
District



MPA Enforcement Stats – 2024 Totals

MPA Patrol effort from eDARs

- Patrol Hours – 35,109 Hrs.
- Contacts – 52,858
- Warnings Given – 2,934
- Citations Issued on MPA Patrol – 1,877 (eDAR)



RMS Data

- Total Ocean Citations – 3,743
- Total Ocean Violations – 5,556
- Citations in MPAs – 471
 - Violations in MPAs - 696
 - MPA (Title 14, Sec. 632) violations – 370



eDAR- Electronic Daily Activity Report

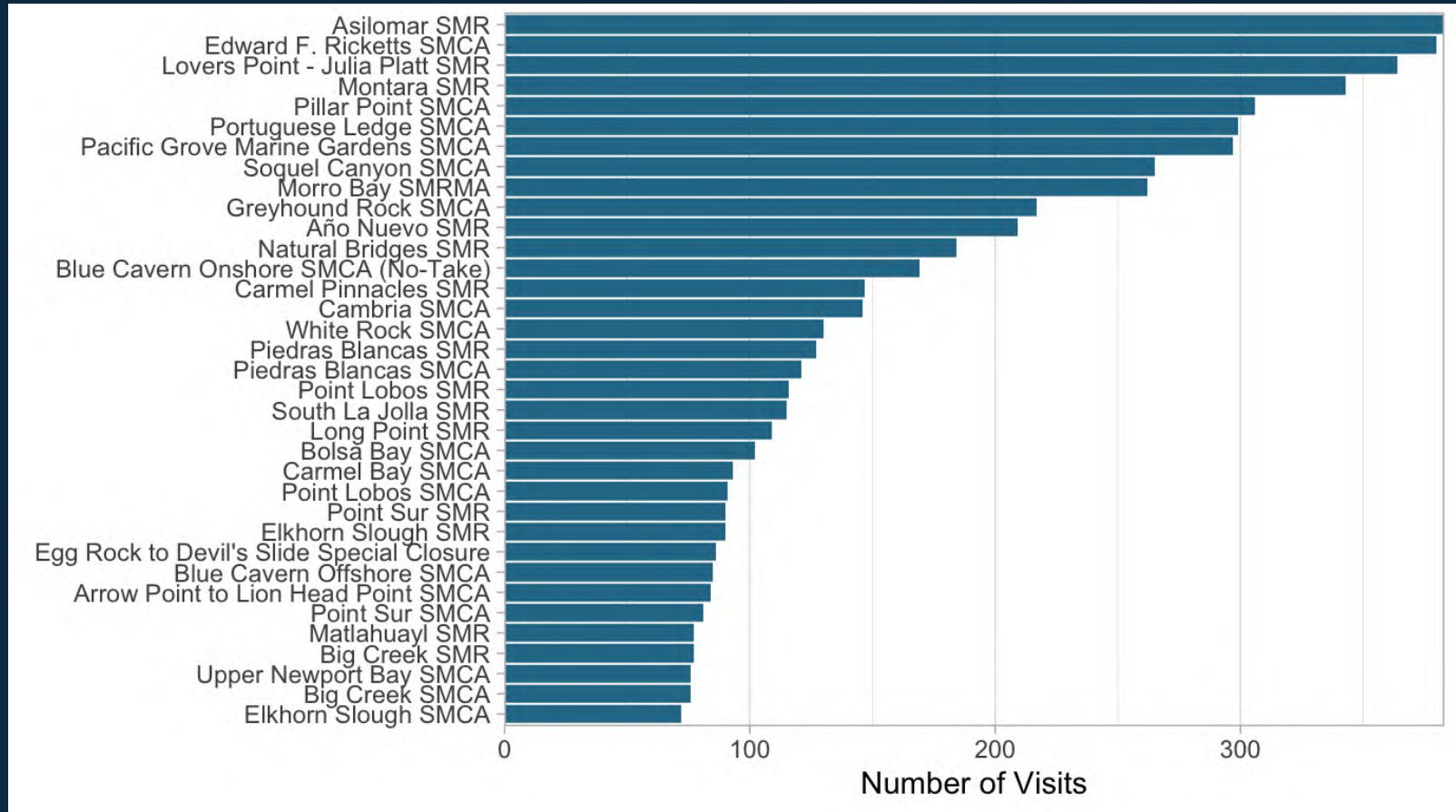


**7,461 MPA
individual officer
entries/ visits
statewide
in 2024**



Total MPA individual officer visits (eDAR)

Top 35 MPAs



Number of Violations by MPA
(MPAs with zero violations not shown)

MPA Designation

- SMCA
- SMCA (No-Take)
- SMR
- SMRMA

Number of Violations

- 1 - 3
- 4 - 10
- 11 - 20
- 21 - 50
- 51 - 72

Number of Violations by MPA
(MPAs with zero violations not shown)

MPA Designation

- SMCA
- SMCA (No-Take)
- SMR
- SMRMA

Number of Violations

- 1 - 3
- 4 - 10
- 11 - 20
- 21 - 50
- 51 - 72

Number of Violations by MPA
(MPAs with zero violations not shown)

MPA Designation

- SMCA
- SMCA (No-Take)
- SMR
- SMRMA

Number of Violations

- 1 - 3
- 4 - 10
- 11 - 20
- 21 - 50
- 51 - 72

-
- Number of Violations by MPA**
(MPAs with zero violations not shown)
- MPA Designation**
- SMCA
 - SMCA (No-Take)
 - SMR
 - SMRMA
- Number of Violations**
- 1 - 3
 - 4 - 10
 - 11 - 20
 - 21 - 50
 - 51 - 72

Number of Violations by MPA
(MPAs with zero violations not shown)

MPA Designation

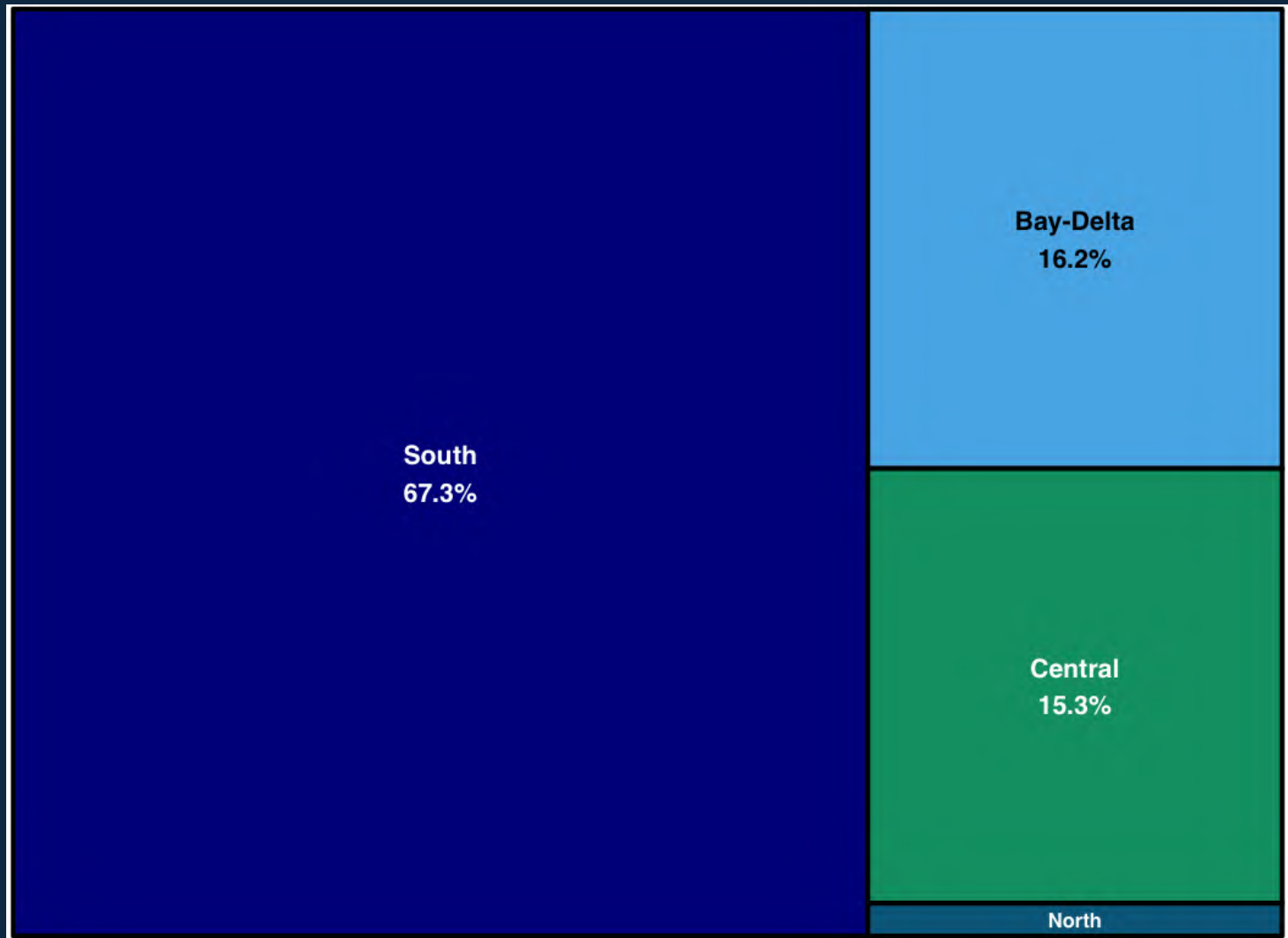
- SMCA
- SMCA (No-Take)
- SMR
- SMRMA

Number of Violations

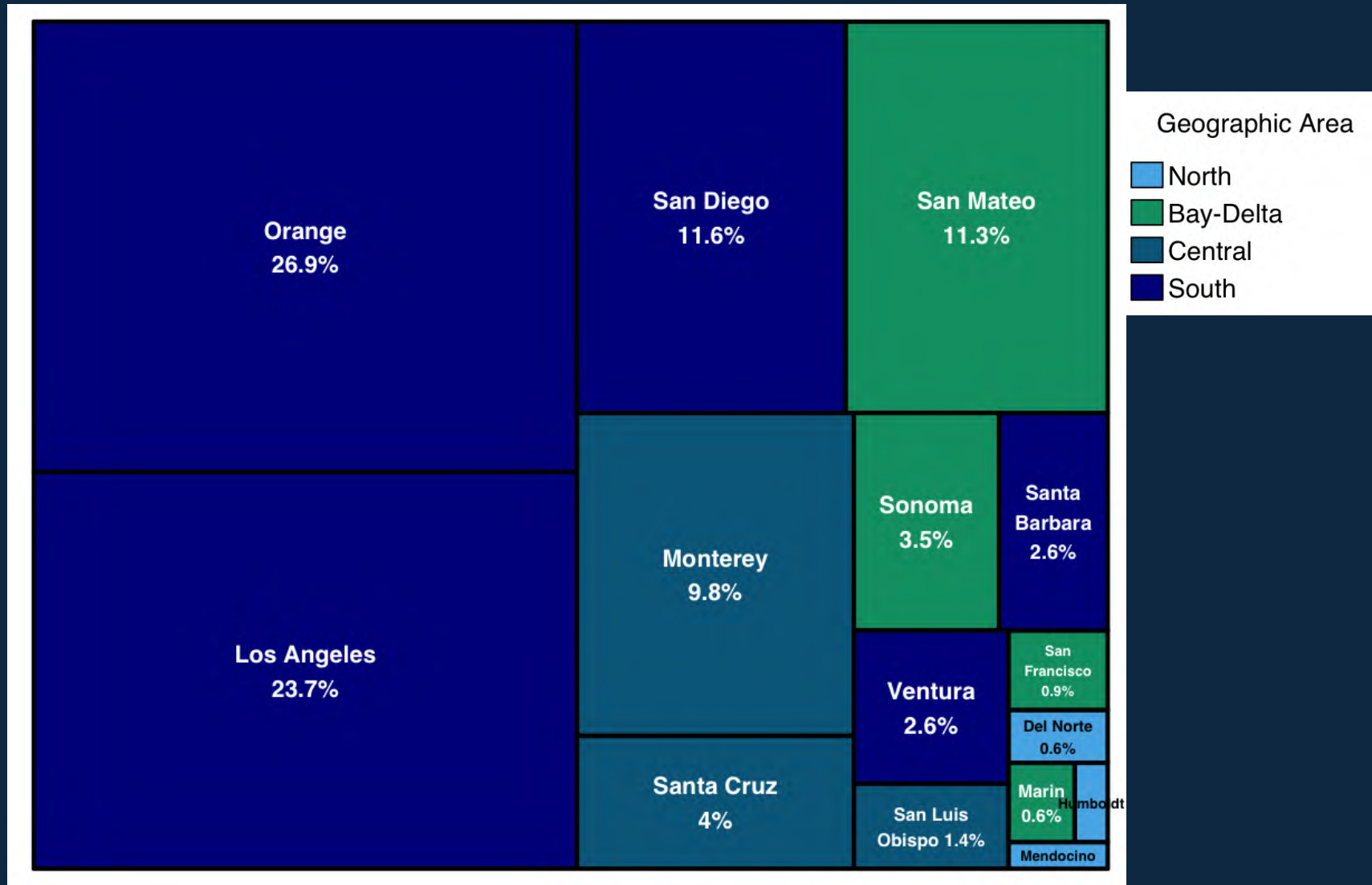
- 1 - 3
- 4 - 10
- 11 - 20
- 21 - 50
- 51 - 72

-
- Number of Violations by MPA**
(MPAs with zero violations not shown)
- MPA Designation**
- SMCA
 - SMCA (No-Take)
 - SMR
 - SMRMA
- Number of Violations**
- 1 - 3
 - 4 - 10
 - 11 - 20
 - 21 - 50
 - 51 - 72

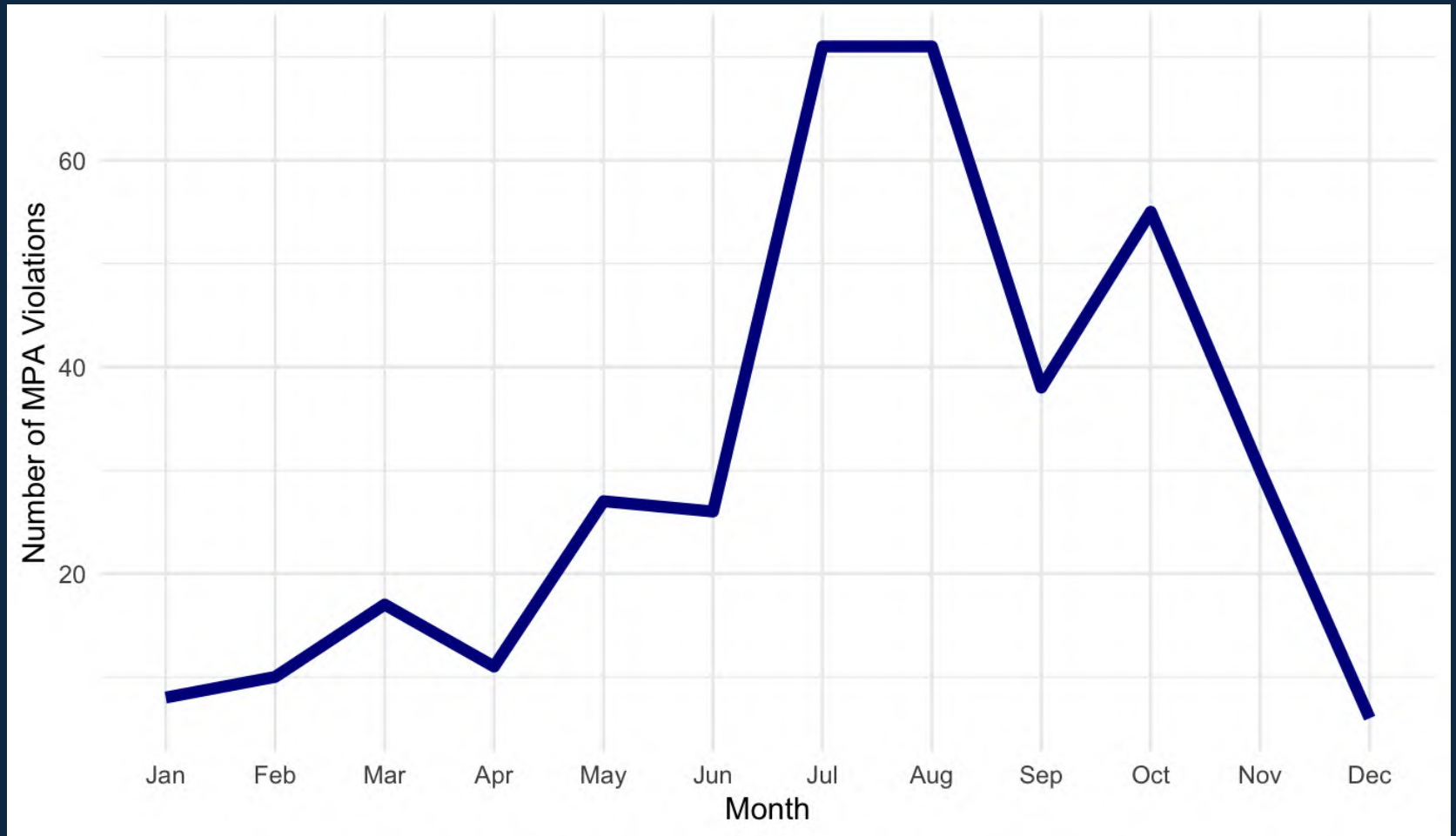
MPA Violations (Sec. 632) by Geographic Area



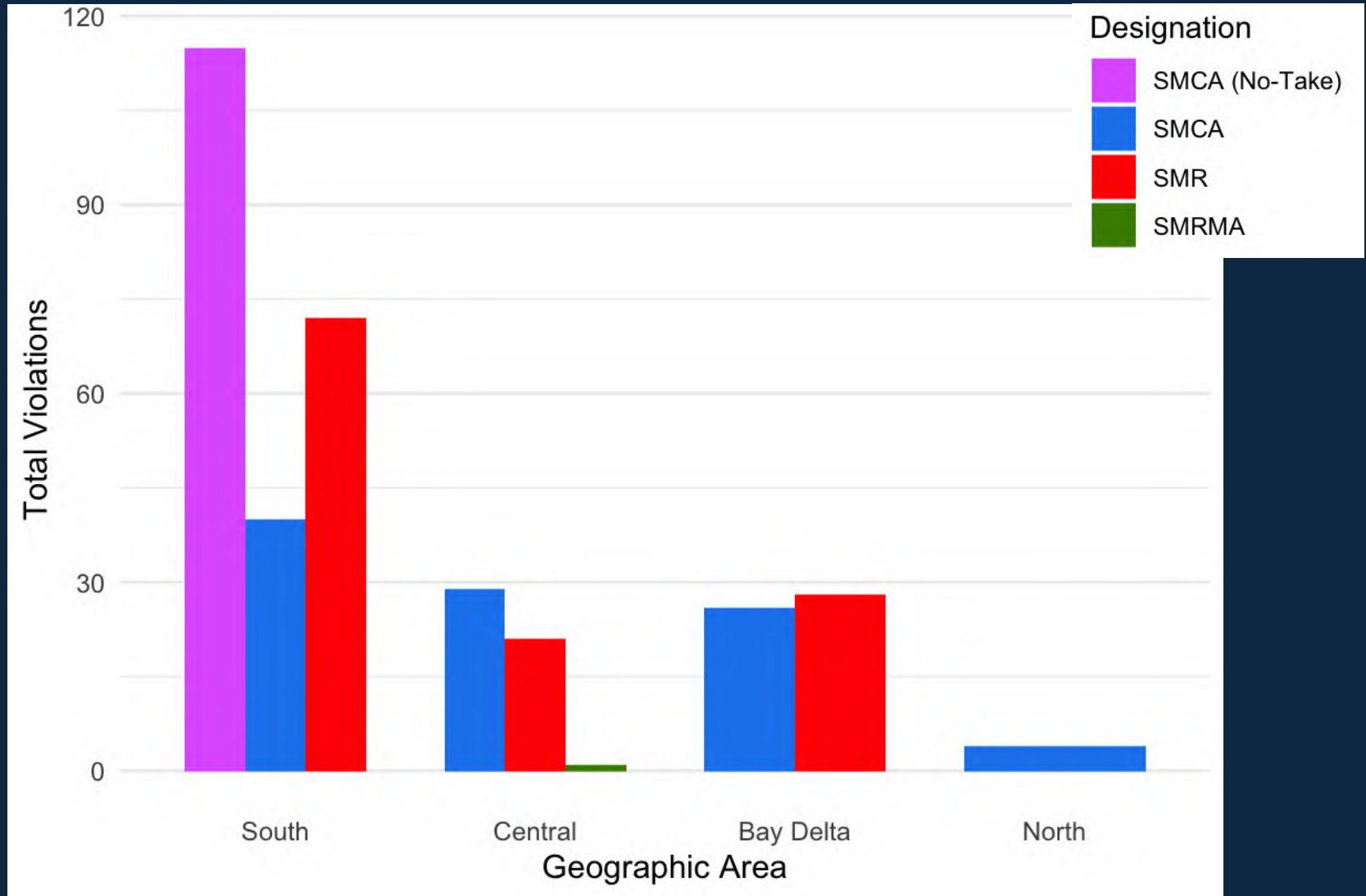
MPA Violations (Sec. 632) by County



Statewide MPA Violations (Sec. 632) by Month

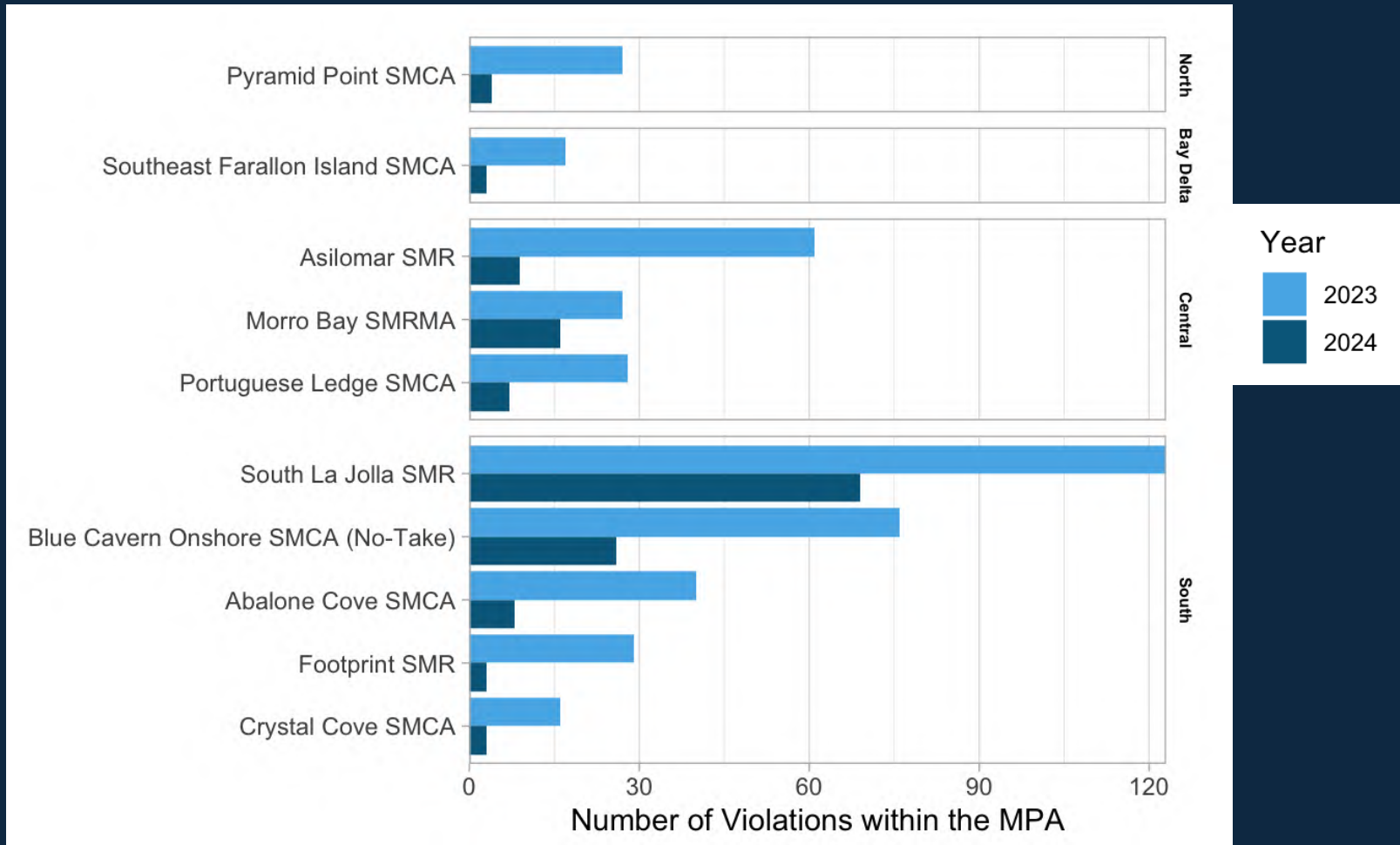


Total Violations by MPA Designation



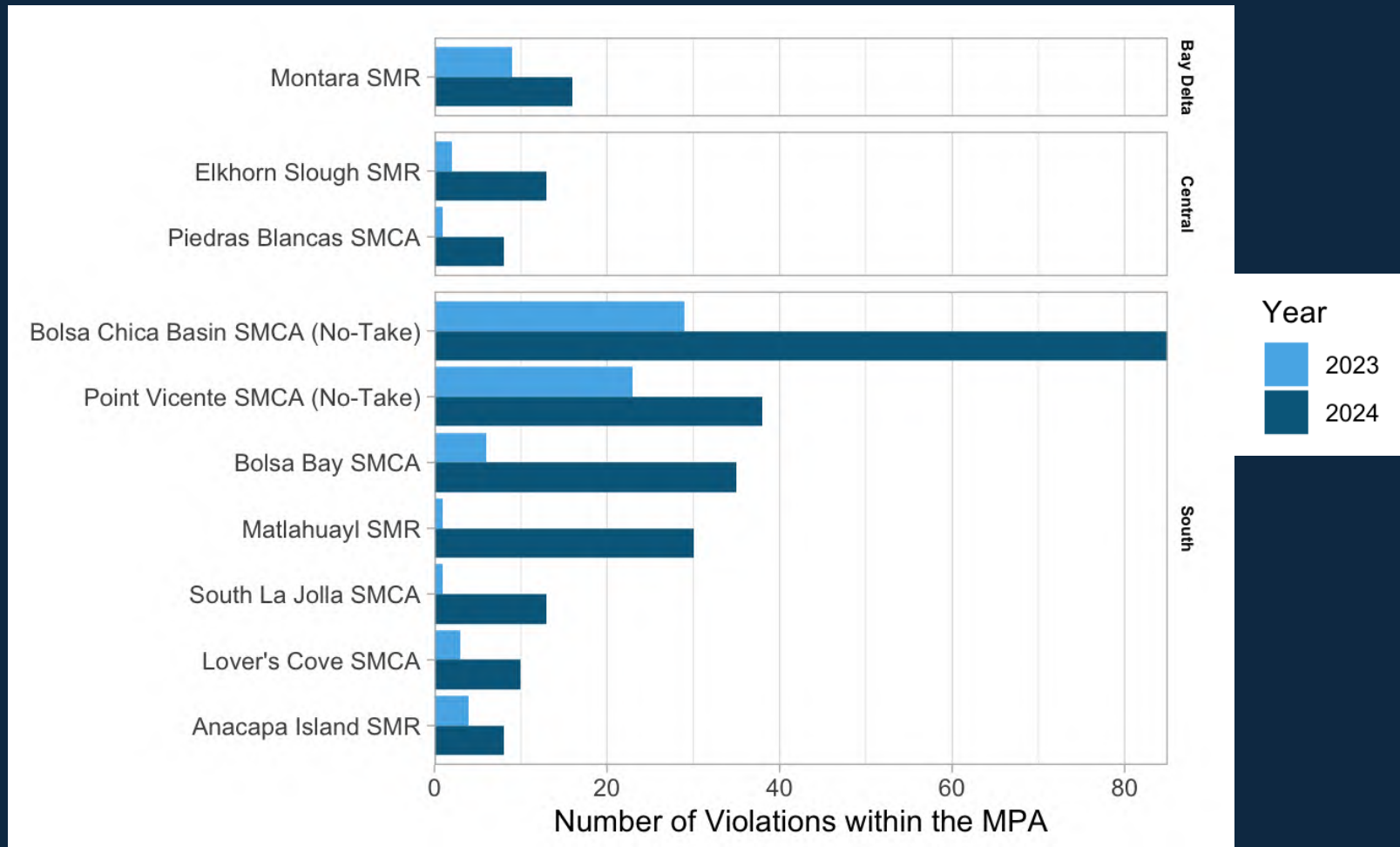
MPAs with largest *decrease* in number of violations

From 2023 to 2024



MPAs with largest *increase* in number of violations

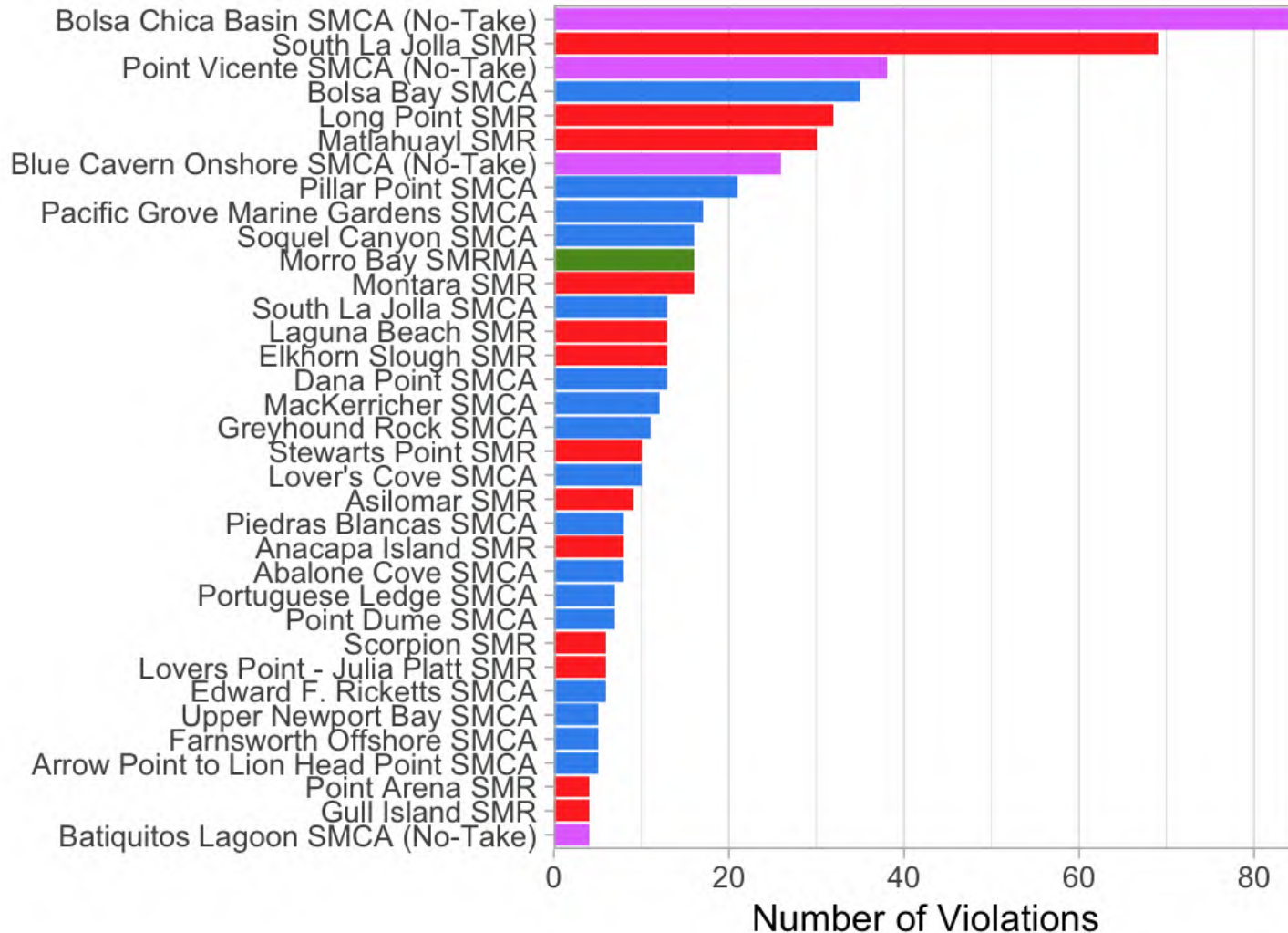
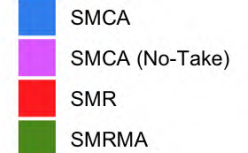
From 2023 to 2024



Violations within MPAs (count-696)

Top 35 MPAs

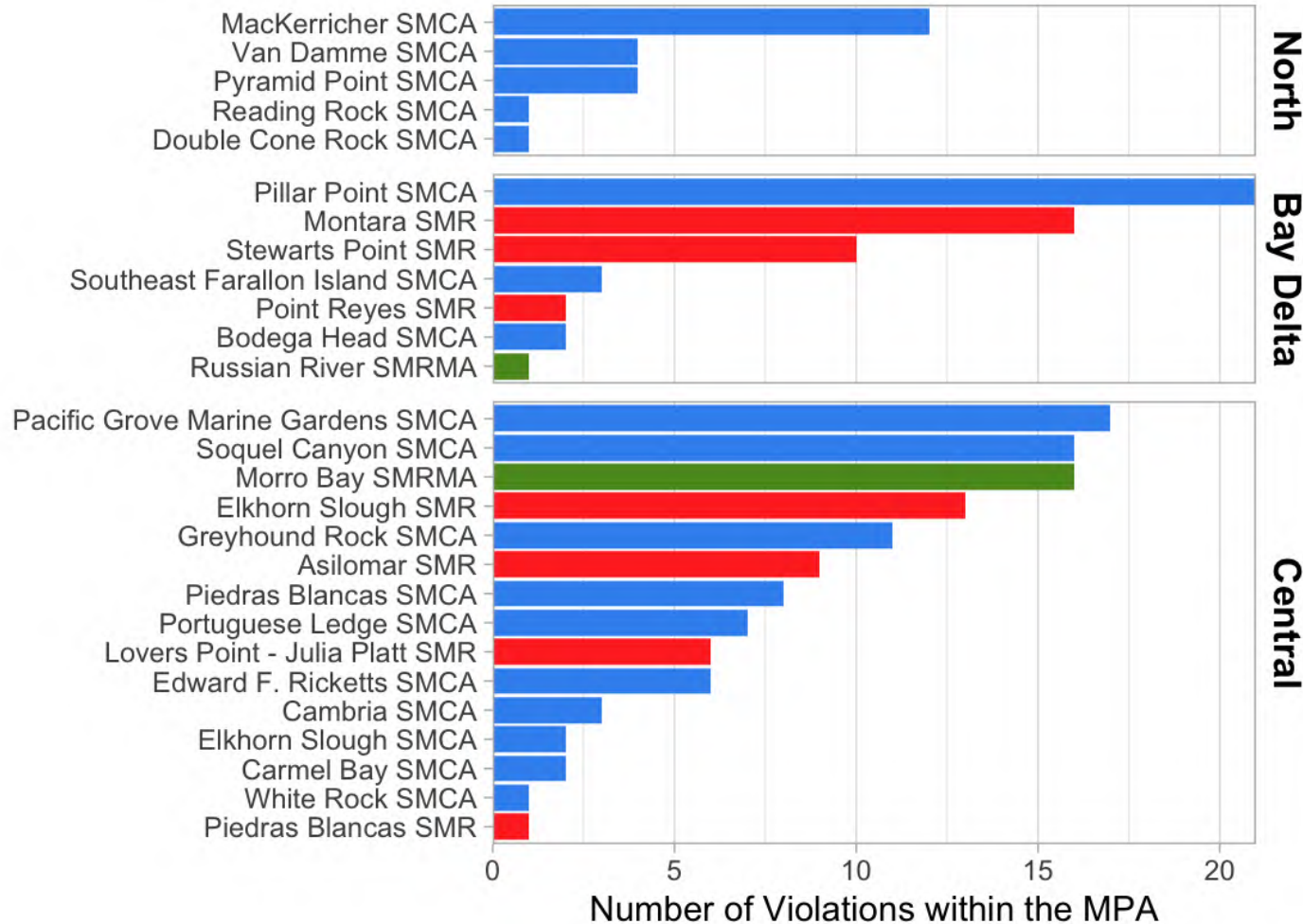
Designation



Violations within MPAs (count-696)

By Geographic Area: North - Central

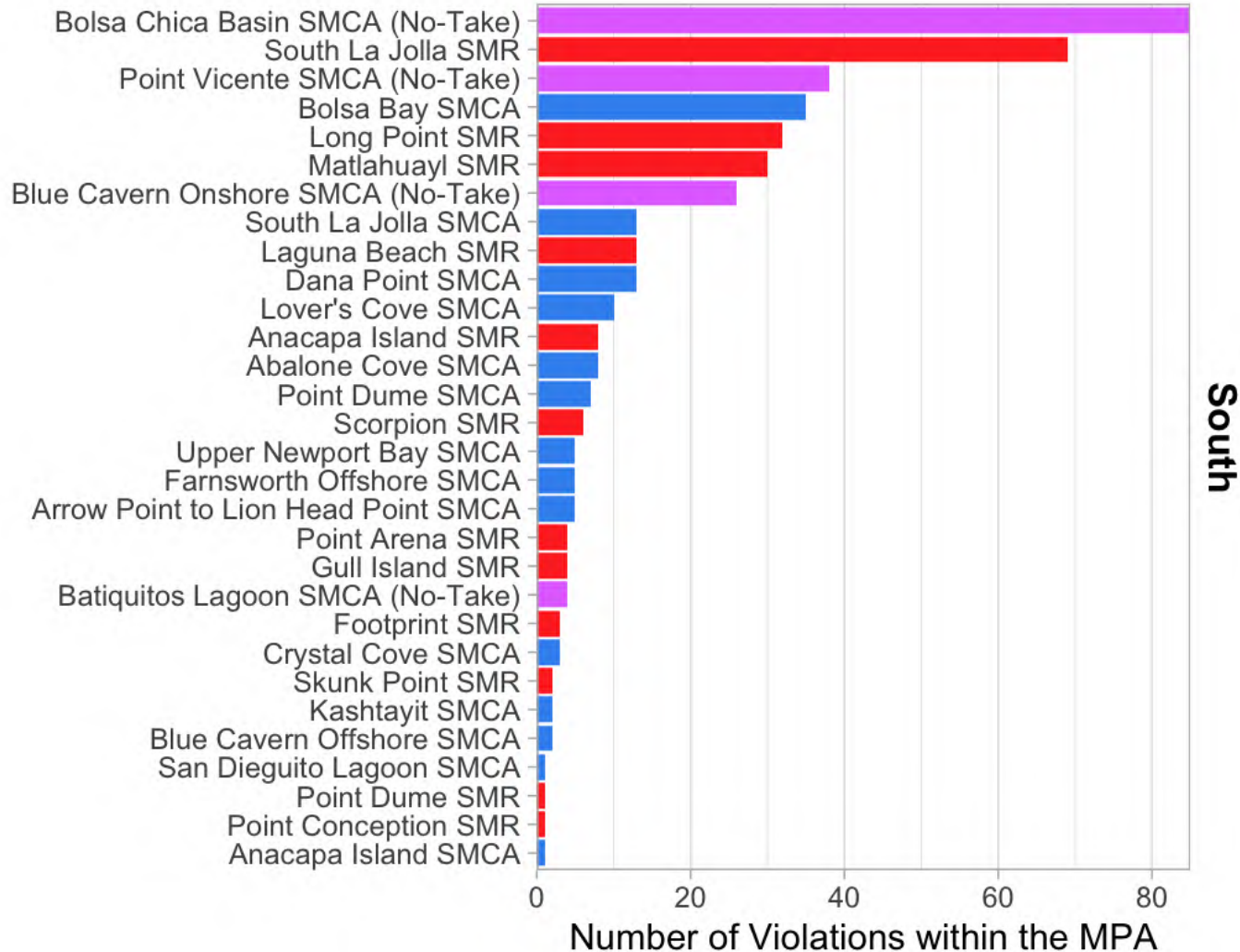
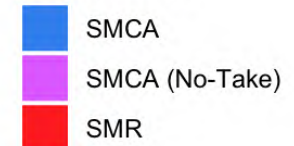
Designation



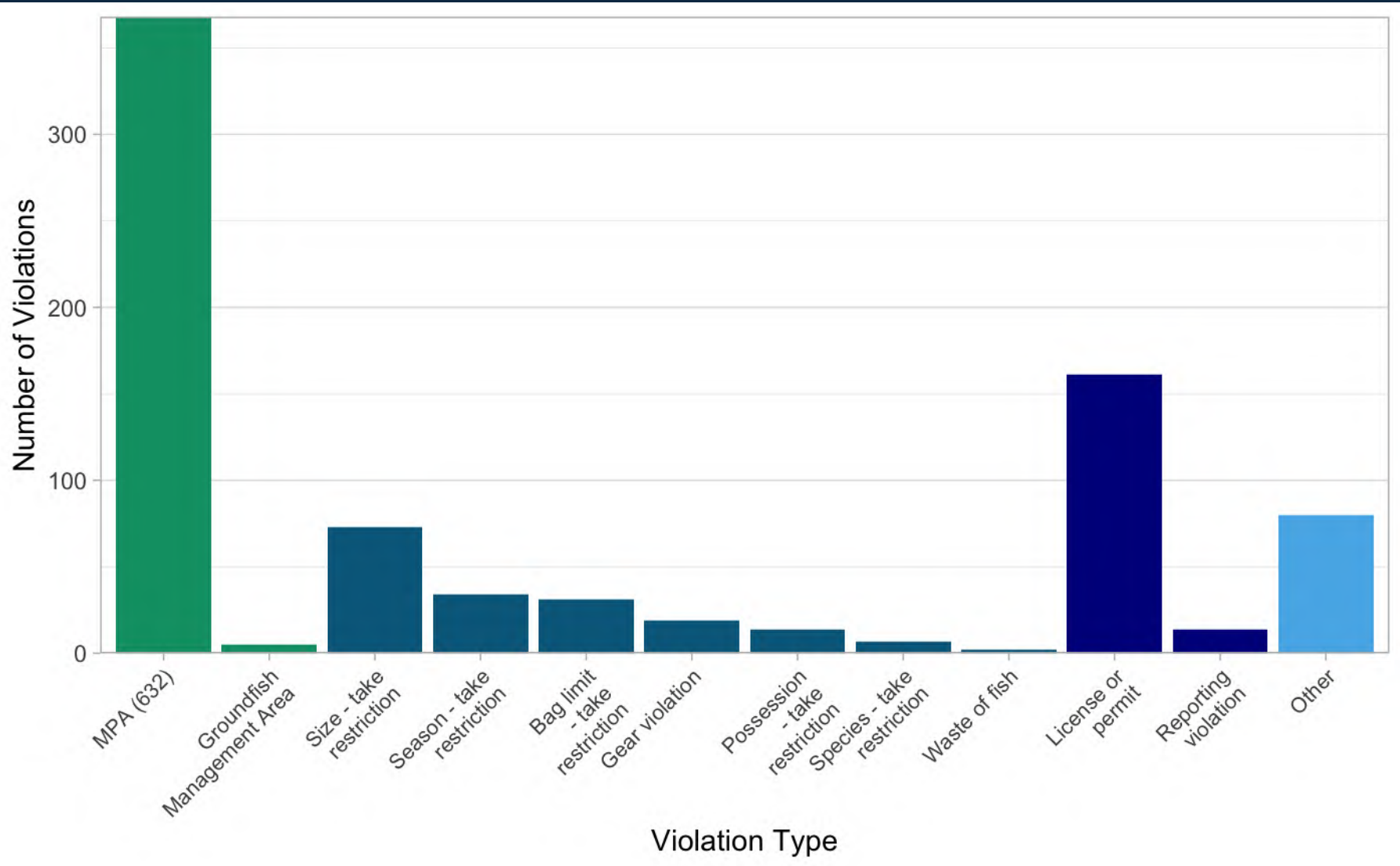
Violations within MPAs (count-696)

By Geographic Area: South

Designation

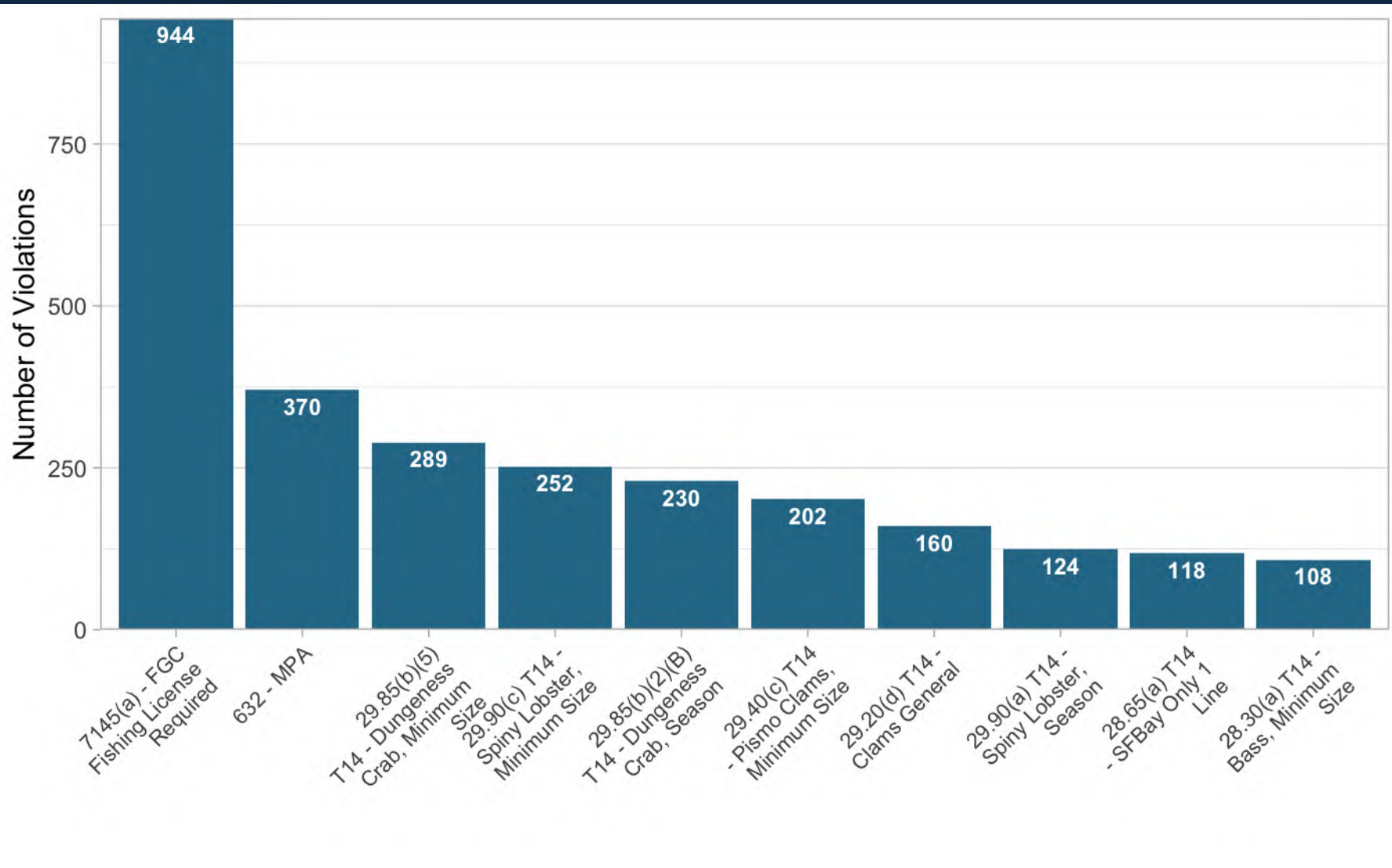


Categories of Violations in MPAs



Top 10 Ocean Violations

5,556 total ocean violations



Questions?





Marine Protected Area Petition Evaluation Status and Next Steps

13 March 2025

Presented to:

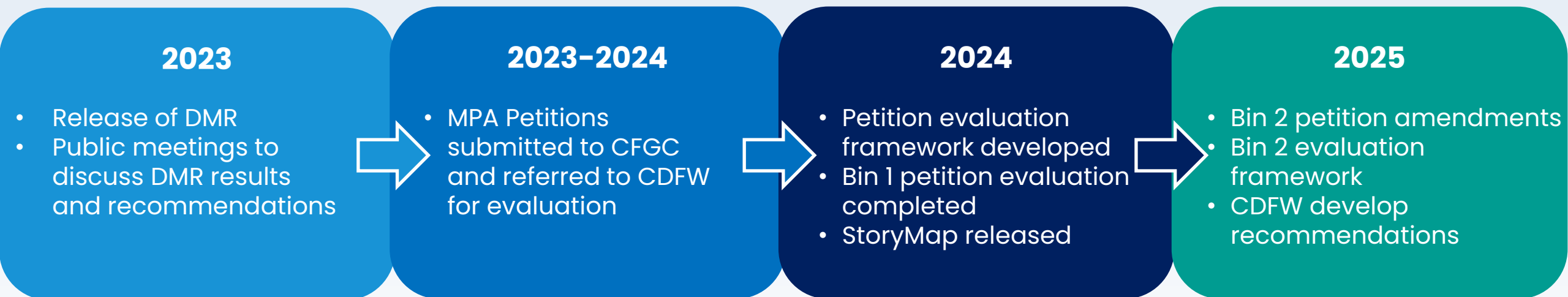
Marine Resources Committee
California Fish and Game Commission

Presented by:

Claire Waggoner
Marine Region Habitat
Conservation Program Manager



Recap: Decadal Management Review and Petition Timeline



Common acronyms:

CFGC=California Fish and Game Commission
CDFW=California Department of Fish and Wildlife
DMR=Decadal Management Review
MRC=Marine Resources Committee

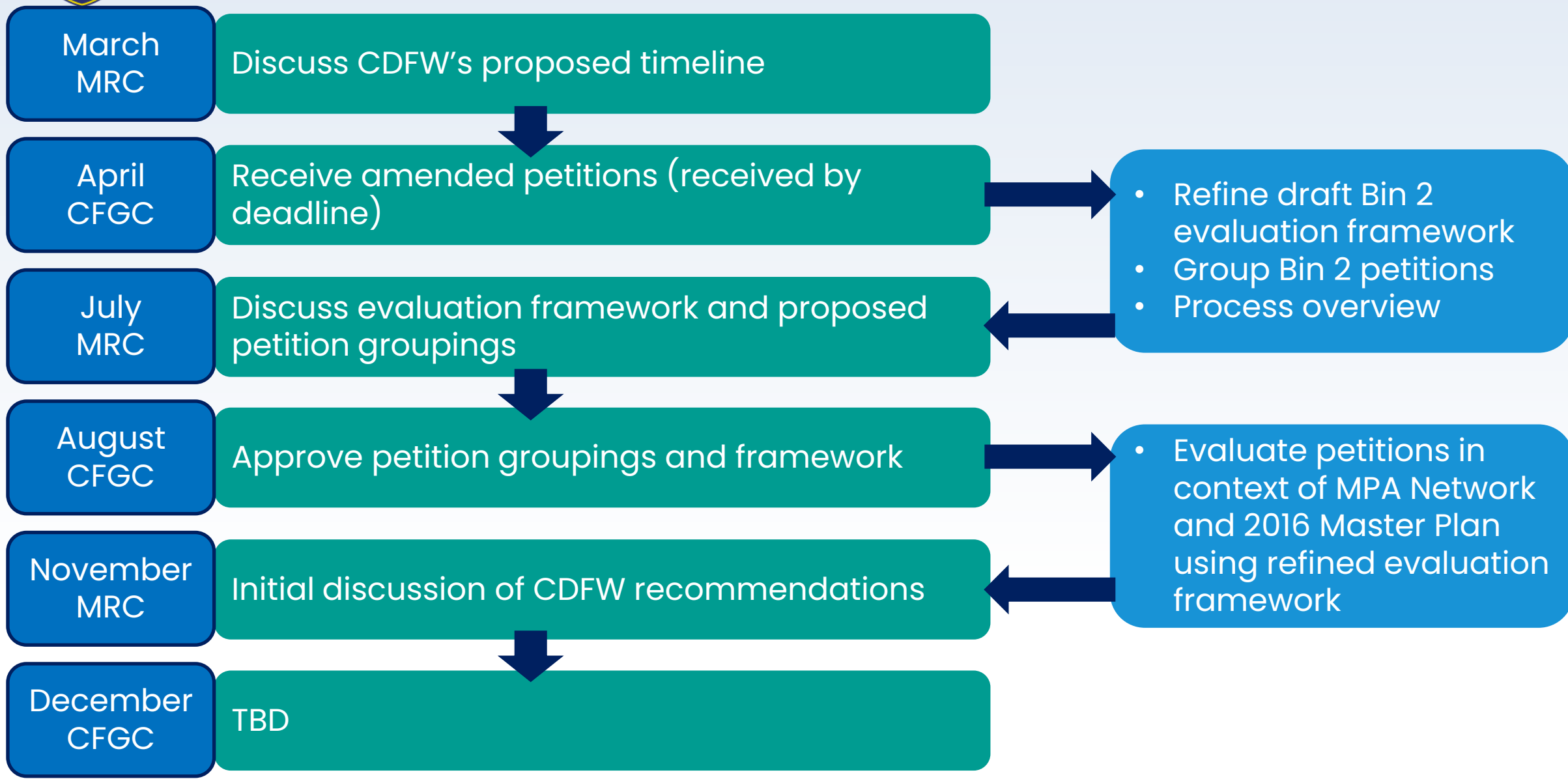


Petition Evaluation Framework: Status





Proposed Bin 2 Petition Milestones and Timeline





MPA Petition Updates: StoryMap



Marine Protected Areas (MPA) Petition Process

California Department of Fish and Wildlife

Click through the collection to:

→ See an **overview** of the petition process, petition evaluation framework, and anticipated timeline

→ Dive into an **interactive map** to visualize proposed changes

→ Explore **petitions sorted** by numerical order, change category, or county, and click the links to learn more about each petition. Any petition proposing a change that can be visualized on a map (e.g., boundary or designation change) will have an image with a slider to swipe between the existing network and the proposed change. Any petition proposing a non-spatial change (e.g., take allowance or regulatory language change) will have a static image showing the location of the affected MPA(s).



Current status:

- CDFW is in Phase 2 of its 3-phased petition evaluation framework and splitting each petition into individual action items
- At the December Commission meeting, CDFW provided its annual report on MPA Management Program accomplishments for 2024; next steps for Bin 2 petition evaluation were discussed, including setting a timeline for accepting amendments to Bin 2 petitions; and, as recommended by the MRC, the Commission adopted a slightly modified version of CDFW's [draft recommendations](#) for Bin 1 petitions

Up next:

- For Bin 2 petitioners who submitted a notice to amend their petition, the full amendment package is due March 14, 2025



Stay up to date!





Next Steps: Implement DMR Recommendations

Near-Term (ongoing – 2 years)

- Rec 1: Improve state agencies tribal engagement
- Rec 4: Apply Review knowledge to Network/Management changes
- Rec 7: Expand outreach and education materials
- Rec 9: Continue OPC coordination
- Rec 10: Improve coordination across Management Program pillars
- Rec 11: Update Action Plan
- Rec 16: More targeted outreach to specific audiences
- Rec 17: Improve SCP process
- Rec 18: Use policy to review MPA restoration/mitigation efforts
- Rec 20: Increase enforcement capacity
- Rec 21: Enhance citation record keeping and management
- Rec 25: Implement MPA climate change research
- Rec 27: Improve understanding of MPA effects on fisheries

Mid-Term (2 – 5 years)

- Rec 2: Create pathway to tribal MPA management
- Rec 3: Build tribal capacity to participate in MPA management
- Rec 6: Include and fund more diverse researchers and stakeholders
- Rec 8: Evaluate MPA accessibility
- Rec 12: Improve understanding of human dimensions
- Rec 13: Explore innovative technologies
- Rec 14: Develop MPA community science strategy
- Rec 15: Evaluate Outreach needs and resource effectiveness
- Rec 22: Increase knowledge on MPA judicial outcomes
- Rec 23: Examine MPA Network design attribute more effectively
- Rec 26: Consider climate change in human dimensions monitoring
- Rec 28: Integrate influencing factors into MPA performance evaluations

Long-Term (5- 10 years)

- Rec 5: Establish targets to meet MLPA goals
- Rec 19: Create MPA Enforcement Plan
- Rec 24: Better incorporate marine cultural heritage into MPA Network





Thank You

Questions?

fgc@fgc.ca.gov

mpamanagementreview@wildlife.ca.gov





Electronic Reporting and Electronic Monitoring Pilot

13 March 2025

Presented to:

**Marine Resources Committee
March 2025**

Presented by:

**Todd Neahr
Environmental Program Manager
Marine Region**



Electronic Reporting & Monitoring Status

- CPFV Web Application Released in 2015
- E-Tix Since 7/1/2019
- Multiple Logbook Reviews
- 2023 Review:
 - 13 DFW Forms & 3 Required Reports
 - Pilot Test Recommendation:
 - CPFV, Market Squid, Dungeness Crab & Experimental Fishing Permits (EFP), and Set Gill Net



Modernizing Data Collection

- Summer 2024
 - Electronic Reporting (ER) and Electronic Monitoring (EM) Vendor Demos
 - Narrowed List and Shared with Ocean Protection Council (OPC) and Resources Legacy Fund (RLF)
 - 3 ER Vendors and 2 EM Vendors
- March 3, 2025 OPC Meeting
 - Approved Disbursement of Funds to RLF
 - 3 Years Funding for Pilot Testing and Report Recommendations



ER and EM Pilot Overview

- Needing Near Real-Time Data
- Logbook Pilot Submissions Meet Current Reporting Requirements
- Valuing Industry Feedback Throughout Pilot
- End Goal: Proof of Concept Supported by Department, Partners and Participating Vessels



ER Testing: CPFV

- CPFV
 - Usage Survey during 2023 Log review
 - 30 Vessels, 3 Vendor Solutions
 - Using 3-4 Vessels Per Solution for Initial Testing and Acceptance
 - San Diego, LA and Orange County Landings, Bay Area



ER Testing: Market Squid Fishery

- Market Squid Fishery
 - Squid Fishery Advisory Committee Accepted Data Flow Mockup during 2023 Log Review
 - 30 Vessels, 3 Vendor Solutions
 - Southern and Central CA Participation



ER and EM Testing: Set Gill Net Fishery

- Bycatch Analysis Recommendation
- 2 ER Vendors & 2 EM Vendors Selected
- 5 Vessels - EM Hub & Cameras
- 5 Vessels - EM Position Logger
- Electronic Monitoring Components
 - Integrated with Electronic Reporting Logbook
 - Sensors Linked to EM Hub or Logger
 - Collect HD Camera Footage at Set & Retrieval Locations



ER and EM Testing: Dungeness Crab & EFP

- Develop New Logbook & Requirements
- 2 ER Vendors & 1 EM Vendor Selected
- 10 Dungeness Crab Vessels per ER Vendor, 5 EFP Vessels
- EM Position Logger
 - Integrated with Electronic Reporting Logbook
 - Sensors Linked to Logger
- Feed Ropeless Gear Portals



Next Steps

Timeframe	Task
Ongoing Through June 2025	Volunteer Recruitment
March & April 2025	Industry Association Meetings
Late April to June 2025	Workshops with Fishermen and Selected Vendors
June 2025	Vendor Development Contracts Start
June 2025 to June 2027	Development and Active Use
July 2027 to June 2028	Feedback Solicitation, Analysis & Reports

Thank You

Todd Neahr

Questions: r7regionalmgr@wildlife.ca.gov





April 3, 2025

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Submitted via email to fgc@fgc.ca.gov

RE: Agenda Item 30.a: Support for MRC Recommendation on Red Abalone Recovery

Dear President Zavaleta and Honorable Commissioners,

We are grateful to Vice President Murray and Commissioner Sklar for leading a thoughtful and productive discussion on red abalone at the March 13, 2025 Marine Resources Committee (MRC) meeting. And we appreciate each Commissioner for your dedication to the effective management of species in California waters. On behalf of our community of recreational and subsistence anglers, spearfishers and harvesters, Fish On is committed to our role in ensuring marine species and resources in California are resilient to increasing stressors.

We support a precautionary approach to managing such a vulnerable and beloved species as the red abalone. Science must be carefully evaluated to ensure that any harvest will not harm the recovery of the red abalone population. The red abalone fishery was closed to prevent its irreversible loss. Any consideration to reopen the fishery must be supported by scientific information to confirm that the abalone population is at a level capable of withstanding additional extractive pressure—in addition to increasing environmental stressors that this species now faces, like climate change and ocean acidification. At this time, there is no strong scientific evidence to demonstrate that red abalone has recovered sufficiently.

While fishery-dependent data is helpful to management of many marine species, harvest is not a necessary component to continued monitoring of red abalone. Opening up the fishery in this or any other capacity will risk further collapse of the species. **We support the MRC recommendation of a continued closure for the next ten years** before revisiting whether or not red abalone can be harvested from a stable population that can be sustained for generations to come. At that time—**given the cultural significance of abalone to California's Tribal Communities—we encourage Tribal rights to be considered before any general recreational allowances are discussed.**

Respectfully,

Anupa Asokan
Executive Director
Fish On

From: Kylie Goughnour

Sent: Tuesday, February 25, 2025 2:20 PM

To: Jamie Bernal; Mary Hovagimian; Driscoll, John; Nora Mounce; Heidi McHugh; Chuck Bonham; Melissa Miller-Henson

Cc: Randy Hooper

Subject: Del Norte County (Request for Restoration of CA. Ocean Salmon Season in 2025 to PFMC)

Good afternoon,

Attached is a letter addressed to the Pacific Fishery Management Council that the Del Norte County Board of Supervisors authorized the Chair to sign at today's regular Board of Supervisors meeting for your records.

It is in relation to a request for restoration of the California Ocean Salmon Season in 2025.

Thank you,

-Kylie

--



Kylie Goughnour
Administrative Services Coordinator
Del Norte County, California
707-464-7214
981 H ST, Suite 210
Crescent City, CA 95531

"Life is better when you're laughing"



County of Del Norte
Board of Supervisors
981 H Street, Ste. 200
Crescent City, California 95531

Phone
(707) 464-7204

Fax
(707) 464-1165

February 25, 2025

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, OR 97220-1384

Re: Request for Restoration of California Ocean Salmon Season in 2025

Dear Council Members, Salmon Technical Team, and Salmon Advisory Subpanel:

On behalf of the Del Norte County Board of Supervisors, I respectfully urge the Pacific Fishery Management Council (PFMC) to restore the California ocean salmon season in 2025. As the northernmost port in California, Crescent City Harbor serves as a vital hub for both commercial and recreational fishing, located just 10 miles from the Oregon border. The continuation of salmon fishery closures has had severe economic, cultural, and ecological consequences for our community.

The closures of the California salmon and nearshore rockfish fisheries in 2023, followed by another full closure of the ocean salmon season in 2024, have imposed significant economic and social hardships on Del Norte County. These closures have disproportionately impacted our harbor, commercial and recreational fishing fleets, local food supply, and overall economy. The cumulative effects of these restrictions threaten the viability of our region's fishing-dependent industries and the well-being of our community members who rely on these resources for their livelihoods and sustenance.

Del Norte County, along with adjacent tribal nations, depends on fishing and tourism to sustain our local economy. The consecutive fishery closures have led to declining tourism revenue, job losses, and business closures, creating long-term economic instability. The absence of a salmon season has also disrupted our community's cultural traditions and food security. Although disaster relief funds for the 2023 closures have been authorized, no payments have been disbursed to commercial fleets or eligible support businesses as of the date of this letter. Even if these funds are eventually distributed, they cannot fully compensate for the extensive economic losses incurred by our community.

The continued closure of commercial and recreational salmon fisheries has further exacerbated economic distress at Crescent City Harbor, leading to reduced slip occupancy, decreased launch ramp fees, and cancellations of accommodations in local hotels, vacation rentals, and campgrounds. Furthermore, businesses that rely on the fishing industry, such as marine supply stores, bait and tackle shops, and local restaurants, have experienced substantial revenue declines. The long-term viability of these businesses is increasingly uncertain.

Our county remains committed to sustainable fisheries, not only for the benefit of our commercial and recreational fishing fleets but also for the health of our marine and freshwater ecosystems. Notably, the Klamath River has already shown significant ecological improvement following the removal of dams, with salmon returning to spawning areas not accessed in over a century. These positive environmental developments support a responsible and science-based approach to restoring salmon fishing opportunities.

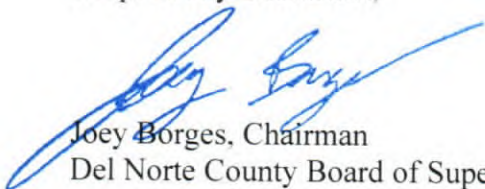
We recognize that the setting of salmon seasons is a complex, multi-agency process that must balance conservation efforts with economic sustainability. As you deliberate on management options for the 2025 salmon season, we respectfully ask that you consider the following key points:

1. **Economic and Cultural Importance:** The California ocean salmon fisheries represent a valuable and renewable natural resource that contributes to the nation's food supply, economy, and cultural heritage. The continued closure of this fishery disproportionately affects coastal communities like ours.
2. **Best Available Science:** Reliable data collection is essential for effective conservation and management. While ocean salmon abundance is inherently difficult to estimate with precision, reports indicate an increase in incidental salmon encounters by commercial and recreational anglers targeting other species, suggesting improved population numbers.
3. **Community Impact:** The loss of another ocean salmon season would further undermine the cultural traditions, economic stability, and social well-being of Del Norte County and neighboring tribal lands.

In conclusion, the Del Norte County Board of Supervisors strongly supports the reopening of the California ocean salmon fishery in 2025. We urge PFM, NOAA Fisheries, and the California Department of Fish and Wildlife to work collaboratively toward this goal to mitigate further economic harm and revitalize our coastal communities.

Thank you for your time and consideration. We appreciate your commitment to science-based fishery management and the long-term sustainability of our shared marine resources.

Respectfully Submitted,



Joey Borges, Chairman
Del Norte County Board of Supervisors

CC: Honorable Alex Padilla, Member of United States Senate
Honorable Adam Schiff, Member of United States Senate
Honorable Jared Huffman, Member of United States Congress
Honorable Mike McGuire, President pro tempore of California State Senate
Honorable Chris Rogers, Member of California State Assembly
California Fish and Game Commission
Charlton Bonham, Director of the California Department of Fish and Game

2025 Salmon/ HMB bubble fishery

From Steve Laviletta <[REDACTED]>

Date Fri 02/14/2025 03:18 PM

To FGC <FGC@fgc.ca.gov>

Dear Commission

I am writing this email in objection to the proposed bubble fishery off HMB. Their argument is that those are moke fish raised in pens as bonus fish, that is no different than the moke fish raised at the hatchery that we all deserve to have access to and haven't had opportunity for two seasons now. And geographically HMB isnt that far from the golden gate to rule out any impacts on the Sacramento stocks.

We all want opportunity this year and many businesses depend on it. I believe the abundance forecast should allow for opportunity for all. Thank you.

Steve Laviletta

Noyo Harbor Recreational Fisherman
[REDACTED]



CDFW NEWS

April 3, 2025

CDFW Protects Returning Humpback Whales from Entanglement Risk While Providing Continued Fishing Opportunities for Dungeness Crab

Media Contacts:

[Ryan Bartling](#), CDFW Marine Region, (415) 238-2638

[Steve Gonzalez](#), CDFW Communications, (916) 804-1714

California Department of Fish and Wildlife (CDFW) Director Charlton H. Bonham has assessed entanglement risk under the Risk Assessment Mitigation Program (RAMP) and [announced changes to both commercial and recreational Dungeness crab fisheries\(opens in new tab\)](#). These changes, which will go into effect at 6 p.m. on April 15, 2025, are intended to provide continued fishing opportunities while minimizing entanglement risk as humpback whales return to forage off the coast of California.

The commercial fishery will remain open in Fishing Zones 1, 2, and 3 (California/Oregon state line to Pigeon Point, 37°11' N. latitude, San Mateo County) under existing trap reductions. A 30-fathom Depth Constraint will also be implemented, prohibiting the use of traps in the commercial fishery in waters seaward of the 30-fathom depth contour as defined by specific waypoints in [Title 50 of the Federal Codes of Regulations, Part 660, Section 660.71\(opens in new tab\)](#).

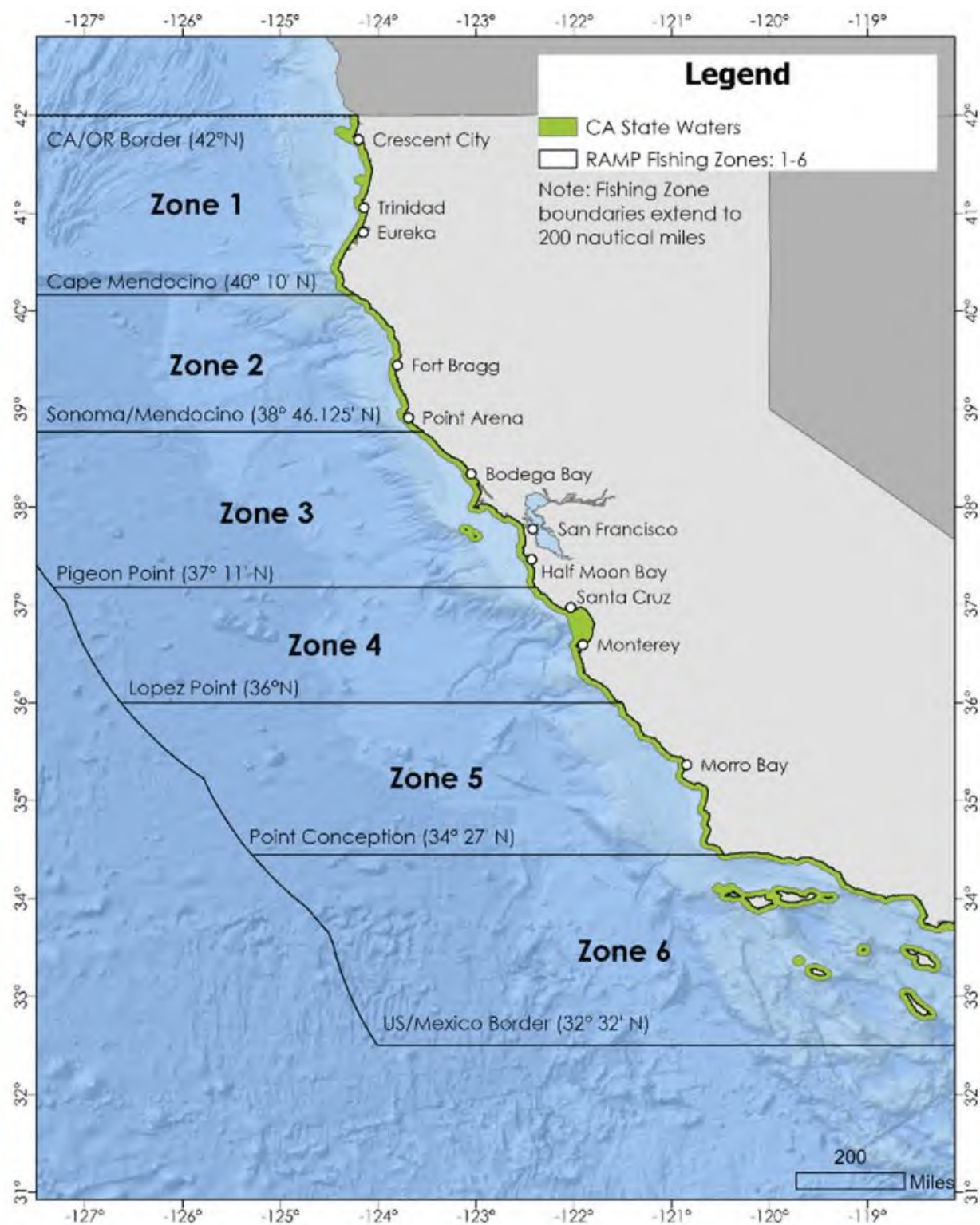
The commercial fishery will close in Fishing Zones 4, 5 and 6 (Pigeon Point, 37°11' N. latitude, San Mateo County, to the U.S./Mexico border), at which time the commercial take and possession of Dungeness crab from those waters is prohibited.

A recreational crab trap restriction will be implemented in Fishing Zone 4 (Pigeon Point to Lopez Point, 36°00' N Latitude, Monterey County). CDFW reminds recreational crabbers that take of Dungeness crab by other methods (including hoop nets and crab snares) is allowed through the close of the season.

All open Fishing Zones remain under a Fleet Advisory for both the commercial and recreational Dungeness crab fisheries. CDFW reminds all fishery participants to implement best practices, as described in the [Best Practices Guide\(opens in new tab\)](#). Based on historical migration data, CDFW anticipates an increase in whale abundance in the upcoming weeks. Individuals should remain vigilant and be prepared to remove gear quickly, to minimize entanglement risk, in the event whales arrive sooner than expected.

Commercial Dungeness crab vessels are authorized to retrieve an unlimited number of commercial Dungeness crab traps which are lost, damaged, abandoned or otherwise derelict in Fishing Zones 4 through 6 starting at 6 a.m. on April 22, 2025. CDFW requests that individuals regularly report retrieved gear to [WhaleSafeFisheries@wildlife.ca.gov\(opens in new tab\)](mailto:WhaleSafeFisheries@wildlife.ca.gov). Any vessel operating or transiting in an open Fishing Zone may not possess more than six traps belonging to another vessel, pursuant to Title 14, California Code of Regulations, Section 132.2(a)(2)(A). In addition, CDFW has authorized the Lost and Abandoned Gear Retrieval Program to begin removing commercial Dungeness crab traps left in the water beginning April 22, 2025, at 6 a.m. in Fishing Zones 4, 5 and 6.

CDFW anticipates the next risk assessment will take place in mid-April 2025. For more information related to the risk assessment process or trap gear retrieval, please visit [CDFW's Whale Safe Fisheries page\(opens in new tab\)](#). For more information on the Dungeness crab fishery, please visit [wildlife.ca.gov/crab\(opens in new tab\)](https://wildlife.ca.gov/crab).



###



Department of Fish & Wildlife Legislative Report

April 2025

(As of April 7, 2025)

[AB 66](#)

([Tangipa](#) R) California Environmental Quality Act: exemption: egress route projects: fire safety.

Status: 03/25/2025 - From committee: Do pass and re-refer to Com. on APPR. (Ayes 10. Noes 0.) (March 24). Re-referred to Com. on APPR.

Summary: Would, until January 1, 2032, exempt from the California Environmental Quality Act (CEQA) egress route projects undertaken by a public agency to improve emergency access to and evacuation from a subdivision without a secondary egress route if the State Board of Forestry and Fire Protection has recommended the creation of a secondary access to the subdivision and certain conditions are met. The bill would require the lead agency to hold a noticed public meeting to hear and respond to public comments before determining that a project is exempt. The bill would require the lead agency, if it determines that a project is not subject to CEQA and approves or carries out that project, to file a notice of exemption with the Office of Land Use and Climate Innovation and with the clerk of the county in which the project will be located.

[AB 317](#)

([Jackson](#) D) California First Time Homeowner Dream Act.

Status: 04/07/2025 - VOTE: Do pass and be re-referred to the Committee on [Revenue and Taxation]

Summary: The California Environmental Quality Act requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. Current law exempts various projects from CEQA, including projects related to the conversion of a structure with a certificate of occupancy as a motel, hotel, residential hotel, or hostel to supportive or transitional housing, as defined, that meet certain conditions. This bill would exempt from CEQA the new construction of a single-family dwelling that meets specified conditions, including that the project contains one single-family dwelling that is 1,500 square feet or less with no more than 3 bedrooms, the property is intended to be sold to a first-time homebuyer, and the lead agency determines that the developer of the project or the property owner provided sufficient legal commitments to meet the requirements of the exemption. The bill would require the lead agency, if it determines that a project qualifies for the exemption, to file a notice of exemption with the Office of Land Use and Climate Innovation, formerly known as the Office of Planning and Research, and the county clerk, as specified. By placing additional requirements on the lead agency to make a determination on whether the CEQA

exemption applies, and on local agencies to determine whether the project developer provided sufficient legal commitments, as described, the bill would impose a state-mandated local program.

AB 400

(Pacheco D) Law enforcement: police canines.

Status: 03/11/2025 - Coauthors revised. From committee: Do pass and re-refer to Com. on APPR. (Ayes 8. Noes 0.) (March 11). Re-referred to Com. on APPR.

Summary: Current law requires law enforcement agencies to maintain a policy on the use of force, as specified. Current law establishes the Commission on Peace Officer Standards and Training (POST) and charges it with, among other duties, developing uniform, minimum guidelines for adoption and promulgation by law enforcement agencies for use of force. This bill would require, on or before January 1, 2027, every law enforcement agency, as defined, with a canine unit to maintain a policy for the use of canines by the agency that, at a minimum, complies with the most recent standards established by POST.

AB 442

(Hadwick D) California Environmental Quality Act: exemption: prescribed fire, thinning, and fuel reduction projects.

Status: 02/18/2025 - Referred to Com. on NAT. RES.

Summary: The California Environmental Quality Act (CEQA) exempts from its requirements prescribed fire, reforestation, habitat restoration, thinning, or fuel reduction projects, and certain related activities, undertaken in whole or in part on federal lands to reduce the risk of high-severity wildfire, if those projects and activities meet certain requirements. This bill would exempt from CEQA prescribed fire, thinning, or fuel reduction projects undertaken within a community with a single ingress and egress evacuation route

AB 454

(Kalra D) Migratory birds: California Migratory Bird Protection Act.

Status: 03/27/2025 - Re-referred to Com. on APPR.

Summary: The California Migratory Bird Protection Act, until January 20, 2025, made unlawful the taking or possession of any migratory nongame bird designated in the federal act before January 1, 2017, any additional migratory nongame bird that may be designated in the federal act after that date, or any part of those migratory nongame birds, except as provided. Current law, as of January 1, 2026, repeals this provision. This bill would, indefinitely, make unlawful the taking or possessing of any migratory bird, as designated in the federal act before January 1, 2025, any additional migratory nongame birds that may be designated in the federal act after that date, or any part of those migratory nongame birds, except as provided.

AB 526

(Papan D) Energy: new in-state geothermal energy generation.

Status: 04/07/2025 - Read second time and amended.

Summary: Current law establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, 100% of all retail sales of electricity to California end-use

customers by December 31, 2045, and 100% of electricity procured to serve all state agencies by December 31, 2035, as provided. Current law requires the Public Utilities Commission (PUC), State Energy Resources Conservation and Development Commission (Energy Commission), and State Air Resources Board to issue a joint report to the Legislature by January 1, 2021, and every 4 years thereafter, that includes specified information relating to the implementation of that state policy. Current law requires the PUC and the Energy Commission to undertake various actions in furtherance of meeting the state's clean energy and pollution reduction objectives. This bill would require the Energy Commission, in coordination with specified agencies, to develop a strategic plan for new in-state geothermal energy in California, as specified.

AB 581

(Bennet D) State shrub.

Status: 03/28/2025 - Read third time. Passed. Ordered to the Senate. (Ayes 61. Noes 0.) In Senate. Read first time. To Com. on RLS. for assignment.

Summary: Would establish the bigberry manzanita (*Arctostaphylos glauca*) as the official state shrub.

AB 623

(Dixon D) Fuel modification and reduction projects: California Environmental Quality Act: coastal development permits: exemptions.

Status: 03/18/2025 - Re-referred to Com. on NAT. RES.

Summary: The California Environmental Quality Act (CEQA) requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. This bill would exempt a fuel modification project to maintain defensible space of 100 feet from each side and from the front and rear of a building or structure and a fuel reduction project to prevent and contain the spread of wildfires from the requirements of CEQA. Because a lead agency would be required to determine whether a project qualifies for this exemption, the bill would impose a state-mandated local program.

AB 687

(Patterson R) Forestry: timber operations: maintenance of timberlands for fuels reduction.

Status: 04/07/2025 – VOTE: Do pass as amended and be re-referred to the Committee on Appropriations.

Summary: The Z'berg-Nejedly Forest Practice Act of 1973 prohibits a person from conducting timber operations unless a timber harvesting plan prepared by a registered professional forester has been submitted to, and approved by, the Department of Forestry and Fire Protection. The act provides that any person who willfully violates any provision of the act or rule or regulation of the State Board of Forestry and Fire Protection is guilty of a misdemeanor. This bill would authorize projects exclusively for noncommercial wildfire fuels reduction in timberland, paid for in part or in whole with public funds, to prepare a timber harvesting plan as an alternative to complying with the California Environmental Quality Act (CEQA), and would require these projects to be regulated as timber operations, as provided. By expanding the scope of a crime, the bill would create a state-mandated local program.

[AB 697](#)

([Wilson](#) D) Protected species: authorized take: State Route 37 improvements.

Status: 03/17/2025 - Referred to Com. on W. P., & W.

Summary: Would permit the Department of Fish and Wildlife to authorize, under the California Endangered Species Act, the incidental take of specified fully protected species resulting from impacts attributable to certain improvements on the State Route 37 corridor, if certain conditions are met, including, among others, the conditions required for the issuance of an incidental take permit.

[AB 717](#)

([Aguiar-Curry](#) D) Water rights: appropriation: small restoration use.

Status: 03/11/2025 - Re-referred to Com. on W. P., & W.

Summary: The Water Rights Permitting Reform Act of 1988 authorizes any person to obtain a right to appropriate water for a small domestic, small irrigation, or livestock stockpond use, as defined, upon registering the use with the State Water Resources Control Board, as prescribed, payment of a registration fee, and application of the water to reasonable and beneficial use with due diligence. Current law requires a person, in registering their water use to the board, to set forth a certification that the registrant has contacted the Department of Fish and Wildlife and to include a copy of any conditions required by the department. This bill would authorize any person to also obtain a right to appropriate water for a small restoration use, as defined. The bill would also authorize a person to apply for a restoration management permit from the Department of Fish and Wildlife, as provided, and if the permit is issued, the person would be required to include a copy of any conditions required by the restoration management permit with the required certification.

[AB 734](#)

([Jackson](#) D) Environmental protection: biological resources data: reporting.

Status: 03/28/2025 - Referred to Com. on W. P., & W.

Summary: The California Public Records Act requires state and local agencies to make their records available for public inspection, unless an exemption from disclosure applies. Current law requires the Secretary of the Natural Resources Agency to establish a standardized electronic format and protocol for the exchange of electronic data for the purposes of meeting environmental data reporting or other usage requirements, as provided. This bill would require any biological resources data, as defined, submitted to a regional, local, or state public agency to be posted on that public agency's internet website and made publicly available within 2 weeks of submission to the public agency, as provided.

[AB 763](#)

([Ward](#) D) Timber harvesting: streambed agreement: waste discharge requirements.

Status: 04/04/2025 – In committee: Set, first hearing. Hearing canceled at the request of author.

Summary: The Z'berg-Nejedly Forest Practice Act of 1973 prohibits a person from conducting timber operations unless a timber harvesting plan prepared by a registered professional forester has been submitted to, and approved by, the Department of Forestry and Fire Protection. Current law provides that an entity submitting a timber harvesting plan, as prescribed, is deemed to have given notice to the Department of Fish and Wildlife. Current law

specifies that the Department of Fish and Wildlife is not required to issue an agreement fewer than 60 days from the date the notification is complete. This bill would require the Department of Fish and Wildlife to issue an agreement within 5 working days of the approval of a timber harvesting plan by the Department of Forestry and Fire Protection.

AB 764

(Gonzalez, Jeff R) Birds and mammals: nongame birds.

Status: 03/25/2025 - From committee: Do pass and re-refer to Com. on APPR. (Ayes 13. Noes 0.) (March 25). Re-referred to Com. on APPR.

Summary: Current law provides for taking and possession of listed nongame birds without a hunting license if taken in compliance with specified requirements. This bill would allow mute swans to be taken or possessed under the same circumstances as other listed nongame birds.

AB 807

(Dixon R) Conservation and mitigation bank: marine artificial reefs.

Status: 04/04/2025 – In committee: Set, first hearing. Hearing canceled at the request of author.

Summary: Current law provides that mitigation banks and conservation banks provide for the conservation of important habitats and habitat linkages, take advantage of economies of scale that are often not available to individualized mitigation projects, and simplify the state regulatory compliance process while achieving conservation goals. Current law provides that no conservation bank, mitigation bank, or conservation and mitigation bank is operative, vested, or final, nor bank credits issued, until the Department of Fish and Wildlife has approved in writing and a conservation easement has been recorded on the site. Current law authorizes banks to issue and sell bank credits to private and public entities. Current law defines “conservation bank” and “mitigation bank” for these purposes. This bill would expand the definition of “conservation bank” and “mitigation bank” to include marine artificial reefs. The bill would authorize a person to, after completion of a full environmental review in compliance with applicable California and federal laws and regulations, create a marine artificial reef for purposes of establishing a mitigation or conservation bank.

AB 846

(Connolly D) Endangered species: incidental take: wildfire preparedness activities.

Status: 03/28/2025 - Re-referred to Com. on W. P., & W.

Summary: The California Endangered Species Act prohibits the taking of an endangered, threatened, or candidate species, except as specified. Under the act, the Department of Fish and Wildlife (department) may authorize the take of listed species by certain entities through permits or memorandums of understanding for specified purposes. Current law requires the State Fire Marshal to identify areas in the state as moderate, high, and very high fire hazard severity zones based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas. Existing law requires a local agency to designate, by ordinance, moderate, high, and very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the State Fire Marshal, as provided. This bill would authorize a city, county, city and county, special district, or other local agency to submit to the department a wildfire preparedness plan to conduct wildfire preparedness activities on land designated as a fire hazard severity zone, as defined, that minimizes impacts to wildlife and

habitat for candidate, threatened, and endangered species. The bill would require the wildfire preparedness plan to include, among other things, a brief description of the planned wildfire preparedness activities, the approximate dates for the activities, and a description of the candidate, endangered, and threatened species within the plan area. The bill would authorize the department to impose a fee on a local agency for the cost of reviewing a wildfire preparedness plan submitted by that local agency, as specified. The bill would require the department, if sufficient information is included in the wildfire preparedness plan for the department to determine if an incidental take permit is required, to notify the local agency within 90 days of receipt of the wildfire preparedness plan if an incidental take permit or other permit is needed, or if there are other considerations, exemptions, or streamlined pathways that the wildfire preparedness activities qualify for, including, but not limited to, the State Board of Forestry and Fire Protection's California Vegetation Treatment Program. The bill would require the department to provide the local agency, in its notification, with guidance that includes, among other things, a description of the candidate, endangered, and threatened species within the plan area and measures to avoid, minimize, and fully mitigate the take of the candidate, threatened, and endangered species, as provided.

AB 880

(Bennett D) State government grants and contracts: payment of claims and grantees' indirect costs.

Status: 04/03/2025 – From committee: Do pass and re-refer to Com. on APPR. Re-referred to Com. on APPR.

Summary: The California Prompt Payment Act requires a state agency that awards a grant or that acquires property or services pursuant to a contract to make timely payments pursuant to the grant or contract. If a state agency or the Controller fails to take certain timely actions and payment is not issued within 45 calendar days from the state agency receipt of an undisputed invoice, the act requires the state agency or the Controller, as applicable, to pay certain penalties. The act provides an exception to certain penalty provisions applicable to services or equipment under the Medi-Cal program if the grant or contract was awarded to a nonprofit organization in an amount less than \$500,000. The act defines the term "grant" to mean a signed final agreement between any state agency and a local government agency or organization authorized to accept grant funding for victim services or prevention programs administered by any state agency or restoration activities performed by a resource conservation district. The act also defines "nonprofit service organization" to mean a nonprofit entity that is organized to provide services to the public, but the act does not use that term in its provisions. This bill would revise the definition of "grant" to also mean a signed final agreement between a state agency and a nonprofit organization and would delete the \$500,000 exception described above.

AB 892

(Schultz D) Captive wild animals: direct contact: prohibition.

Status: 04/02/2025 - Re-referred to Com. on W. P., & W.

Summary: Current law prohibits the importation, transportation, or possession of specified wild animals into this state, except under a revocable, nontransferable permit, known as a restricted species permit, issued by the Department of Fish and Wildlife, in cooperation with the Department of Food and Agriculture, and only if certain requirements are met. Current law

exempts specified entities from this permit requirement under certain circumstances. Current law requires the Fish and Game Commission, in cooperation with the Department of Food and Agriculture, to adopt regulations governing, among other things, the confinement of a wild animal possessed under a restricted species permit and the possession of all other wild animals. Current law requires those regulations to be designed to, among other things, provide for the welfare of wild animals and the safety of the public. This bill would prohibit a person from allowing any member of the public to come into direct contact with specified animals held in captivity. The bill would provide that this prohibition does not apply to direct contact between those animals and certain individuals. A person who violates this prohibition would not be subject to criminal penalty but would be subject to certain civil penalties and any restricted species permit for the animal would be subject to immediate suspension or revocation by the Department of Fish and Wildlife.

AB 902

(Schultz D) Transportation planning and programming: barriers to wildlife movement.

Status: 03/17/2025 - Referred to Coms. on TRANS. and L. GOV.

Summary: Current law requires certain transportation planning agencies to prepare and adopt regional transportation plans directed at achieving a coordinated and balanced regional transportation system. Current law requires that each regional transportation plan include a sustainable communities strategy prepared by each metropolitan planning organization in order to, among other things, achieve certain regional targets established by the State Air Resources Board for the reduction of greenhouse gas emissions from automobiles and light trucks in the region for 2020 and 2035, respectively. This bill would require the regional transportation plan or sustainable communities strategy, upon the adoption or next revision on or after January 1, 2028, to, among other things, identify and analyze connectivity areas, permeability, and natural landscape areas that are partially or fully within the region of the metropolitan planning organization or transportation planning agency, and consider the impacts of development and the barriers caused by transportation infrastructure and development to wildlife and habitat connectivity. The bill would also require metropolitan planning organizations and regional transportation agencies, in implementing those requirements, to, among other things, incorporate appropriate standards, policies, and feasible implementation programs, consult with certain entities, and consider relevant best available science as appropriate.

AB 929

(Connolly D) Sustainable groundwater management: managed wetlands.

Status: 03/25/2025 - Re-referred to Com. on W. P., & W.

Summary: The Sustainable Groundwater Management Act requires all groundwater basins designated as high- or medium-priority basins by the Department of Water Resources to be managed under a groundwater sustainability plan or coordinated groundwater sustainability plans, except as specified. Existing law defines various terms for purposes of the act. This bill would add various defined terms for purposes of the act, including the terms “managed wetland” and “small community water system.”

AB 975

(Gallagher R) California Environmental Quality Act: lake and streambed alteration agreements: exemptions: culverts and bridges.

Status: 03/19/2025 - Re-referred to Com. on NAT. RES.

Summary: Current law prohibits a person, a state or local governmental agency, or a public utility from substantially diverting or obstructing the natural flow of, or substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake, or depositing or disposing of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, unless prescribed requirements are met, including written notification to the Department of Fish and Wildlife regarding the activity. Current law requires the department to determine whether the activity may substantially adversely affect an existing fish and wildlife resource and, if so, to provide a draft lake or streambed alteration agreement to the person, agency, or utility. Current law prescribes various requirements for lake and streambed alteration agreements. Current law also establishes various exemptions from these provisions. This bill would exempt from these provisions emergency projects undertaken, carried out, or approved by a state or local government agency to maintain, repair, restore, or reconstruct a bridge 30 feet long or less or reconstruct a culvert 70 feet long or less, that has been damaged as a result of fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide, within one year of the damage.

AB 1000

(Gallagher R) California Environmental Quality Act: exemption: Five-Mile Basin

Status: 03/18/2025 - Re-referred to Com. on NAT. RES.

Summary: The California Environmental Quality Act (CEQA) requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. This bill would exempt from the requirements of CEQA a project to remove sediment from the Five-Mile Basin in the City of Chico. This bill would make legislative findings and declarations as to the necessity of a special statute for the City of Chico.

AB 1007

(Rubio, Blanca D) Land use: development project review.

Status: 03/25/2025 - Re-referred to Com. on L. GOV.

Summary: The Permit Streamlining Act requires a public agency that is the lead agency for a development project to approve or disapprove a development project within specified time periods. The act requires a public agency, other than the California Coastal Commission, that is a responsible agency for specified development projects to approve or disapprove the project within 90 days of the date on which the lead agency has approved the project or within 90 days of the date on which the completed application has been received and accepted as complete by the lead agency, whichever is longer. This bill would reduce the time period that a responsible agency is required to approve or disapprove a project, as described above, from 90 days to 45 days. By increasing the duties of local officials, this bill would impose a state-mandated local program.

AB 1024

(Harabedian D) Department of Fish and Wildlife: San Gabriel Valley Bear Management and Community Safety Act.

Status: 03/10/2025 - Referred to Com. on W. P., & W.

Summary: Would establish the San Gabriel Valley Bear Management and Community Safety Act, which would require, on or before January 1, 2027, the department to develop a regional plan specific to the cities located within the San Gabriel Valley in the County of Los Angeles to address issues relating to bears in the community. The bill would require the plan to include various components, including, among other things, an overview of the behaviors of the bears in the San Gabriel Mountains. The bill would require the department to establish measurable performance goals for reducing bear encounters within the cities located in the San Gabriel Valley in the County of Los Angeles, and to report those goals to the Legislature on or before January 1, 2027. The bill would require the department to tag and track any bear that enters a residential neighborhood in a city located within the San Gabriel Valley in the County of Los Angeles using innovative technologies, as specified. This bill would make legislative findings and declarations as to the necessity of a special statute for County of Los Angeles.

AB 1038

(Hadwick R) Bears: hunting: use of dogs.

Status: 03/10/2025 - Referred to Com. on W. P., & W.

Summary: Current law delegates to the Fish and Game Commission the power to regulate the taking or possession of birds, mammals, fish, amphibians, and reptiles in accordance with prescribed laws. Current law authorizes the commission to establish, extend, shorten, or abolish open seasons and closed seasons for the taking of game mammals, including bears. Current law makes it unlawful to take any bear with a firearm, trap, or bow and arrow without first procuring a tag authorizing the taking of that bear, as specified. Current law makes it unlawful to permit or allow a dog to pursue a bear at any time. Existing law establishes various exceptions to that prohibition including the use of dogs to pursue a bear pursuant to a depredation permit if certain conditions are met. This bill would require the commission to establish seasons during which a person would be authorized to allow dogs to pursue a bear if the person does not injure or kill the bear or allow the bear to be injured or killed while engaging in the activity, as specified.

AB 1039

(Hart D) State-funded assistance grants and contracts: advance payments.

Status: 03/10/2025 - Referred to Com. on G.O.

Summary: Current law authorizes a state agency administering a grant program or contract to advance a payment to a recipient entity, subject to specified requirements. Current law defines "recipient entity" for these purposes to mean a private, nonprofit organization qualified under federal law, or a federally recognized Indian tribe whose territorial boundaries lie wholly or partially within the State of California, as specified. Current law requires the administering state agency, among other things, to prioritize recipient entities and projects serving disadvantaged, low-income, and under-resourced communities, and to ensure an advance payment to the recipient entity does not exceed 25% of the total grant or contract amount, except as specified. This bill would limit the requirement to prioritize recipient entities and projects to grants and contracts advertised before January 1, 2026. The bill would require, rather than authorize, an

administering state agency to advance a payment to a recipient entity in accordance with the above requirements for all grants and contracts advertised on or after January 1, 2026.

AB 1056

(Bennett D) Gill nets: permits.

Status: 03/18/2025 - Re-referred to Com. on W. P., & W.

Summary: Current law prohibits gill nets and trammel nets from being used for commercial purposes, except under a revocable, nontransferable permit issued by the Department of Fish and Wildlife. Current law requires the Fish and Game Commission to adopt regulations for the issuance of gill net and trammel net permits as necessary to establish an orderly gill net and trammel net fishery. Current law prohibits the department from issuing any new gill net or trammel net permits and authorizes the department to renew an existing gill net or trammel net permit. Current law authorizes the transfer of a gill net or trammel net permit to another person under limited circumstances. This bill would prohibit the department from renewing a permit unless at least 1,000 pounds of halibut or 1,000 pounds of white seabass were landed under the permit between January 1, 2020, and December 31, 2024, inclusive.

AB 1086

(Muratsuchi D) Marine Carbon Initiative.

Status: 04/01/2025 – Re-Referred to Com. on NAT. RES.

Summary: Would require the State Air Resources Board to establish the Marine Carbon Initiative and would set forth the objectives of the initiative, including advancing the body of research and scientific understanding of marine carbon dioxide removal and sequestration. The bill would require the initiative to include the Marine Carbon Council (council), the Marine Carbon Research Program (program), and an expedited marine carbon research program permitting process, as provided. The bill would require the state board, on or before April 2, 2026, to establish the council to advance the science and understanding of marine carbon dioxide removal and sequestration methods and technologies. The bill would require the council to consist of 7 members chosen by the state board who would be selected on or before July 1, 2026, and would specify the selection process for, and the qualifications and duties of, the council. The bill would require the state board, on or before July 1, 2027, to establish the program, and would require the state board to administer the program in coordination with the council. The bill would require the program to award grants on a competitive basis, and other financial incentives the state board may designate, for eligible marine carbon dioxide removal and sequestration projects, as specified. The bill would require the council, on or before January 1, 2027, and biennially thereafter, to submit a report to the Legislature that, at minimum, summarizes the findings and progress of the council in its work, as provided. The bill would require, upon appropriation by the Legislature, the sum of \$2,000,000 to be allocated to the state board annually for no less than 7 years to fund the program.

AB 1089

(Carrillo D) Western Joshua Tree Conservation Act: industrial projects and commercial projects.

Status: 03/25/2025 - Re-referred to Com. on W. P., & W.

Summary: Current law authorizes the Department of Fish and Wildlife to enter into an agreement with any county or city to delegate to the county or city the ability to authorize the

taking of a western Joshua tree associated with developing single-family residences, multifamily residences, accessory structures, and public works projects concurrent with its approval of the project if certain conditions are met. Current law authorizes any person or public agency receiving a take authorization for a project to pay specified fees in lieu of satisfying the mitigation obligation on several bases, including if the project receives a permit issued by a county or city. This bill would additionally authorize the department to enter into an agreement with any city to delegate to the city the ability to authorize the taking of western Joshua trees associated with developing commercial and industrial projects. The bill would, relative to other project types subject to delegated local mitigation authority, limit the bases for commercial or industrial projects to pay specified fees in lieu of satisfying the mitigation obligation, as provided.

AB 1169

(Gonzalez, Jeff D) Wildlife grants: Shared Habitat Alliance for Recreational Enhancement program.

Status: 03/10/2025 - Referred to Com. on W. P., & W.

Summary: Current law establishes various programs and authorizes various projects related to wildlife-dependent recreational activities and the protection of wildlife, including projects to benefit upland game bird species and waterfowl and the Shared Habitat Alliance for Recreational Enhancement (SHARE) program. Current law provides that it is the intent of the SHARE program to encourage private landowners to voluntarily make their land available to the public for wildlife-dependent recreational activities, as specified. Current law requires a cap on financial compensation offered to a private landowner of \$30 per acre, or \$50 per public participant per day. Current law authorizes the Department of Fish and Wildlife, as part of the SHARE program, to make grants to, or enter into agreements with, nonprofit organizations, governmental entities, or any other entities for purposes of carrying out the SHARE program. This bill would instead require the department to make those grants to, or enter into agreements with, the above described entities, including a nonprofit conservation organization, when the department finds the grants or agreements are necessary for carrying out the purposes of the SHARE program.

AB 1311

(Hart D) California Rangeland, Grazing Land, and Grassland Protection Program.

Status: 04/01/2025 - Re-referred to Com. on NAT. RES.

Summary: Current law establishes the California Rangeland, Grazing Land, and Grassland Protection Program to protect California's rangeland, grazing land, and grasslands through the use of conservation easements, for specified purposes. Current law authorizes, under the program, funds to be expended by the Wildlife Conservation Board for the acquisition of conservation easements over qualified property, as defined, and authorizes the board to make grants of funds to a state agency, local public agency, or nonprofit organization for the acquisition of conservation easements over qualified property. The Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024, approved by the voters as Proposition 4 at the November 5, 2024, statewide general election, authorized the issuance of bonds in the amount of \$10,000,000,000 pursuant to the State General Obligation Bond Law to finance projects for safe drinking water, drought, flood, and water resilience, wildfire and forest resilience, coastal resilience, extreme heat mitigation, biodiversity and nature-based climate solutions, climate-smart, sustainable, and resilient farms, ranches, and

working lands, park creation and outdoor access, and clean air programs. The act makes available, upon appropriation by the Legislature, \$870,000,000 to the board for grant programs to protect and enhance fish and wildlife resources and habitat and achieve the state's biodiversity, public access, and conservation goals. This bill would appropriate, from the above-described bond funds made available to the board, \$400,000,000 to the board to award under the program as grants to eligible entities, as defined, to acquire conservation easements on qualified property that is privately owned and supports the production of food and fiber and ecosystem services, including, but not limited to, wildfire fuel reduction, groundwater recharge, wildlife habitat, and open vistas.

AB 1316

(Addis D) Hunting licenses: information on firearms.

Status: 03/10/2025 - Referred to Com. on W. P., & W.

Summary: Would require the Department of Fish and Wildlife, beginning July 1, 2027, to ensure that every person who purchases a hunting license receives, at minimum, information on certain topics related to firearms, including the safe storage of firearms, liability for parents and guardians who should have known their child could access a firearm at home, basic California firearm laws, and how to legally transfer or relinquish a firearm. The bill would authorize the department, in cooperation with the Department of Justice, to promulgate regulations regarding the implementation of this requirement, and to include additional information to be provided with a hunting license.

AB 1319

(Schultz D) Protected species: California Endangered Species Act.

Status: 03/24/2025 - Re-referred to Com. on W. P., & W.

Summary: Would make it unlawful for a person in California to transport, sell, offer for sale, possess with the intent to sell, receive, acquire, or purchase any fish, wildlife, or plant that was taken, possessed, transported, or sold in violation of any law, treaty, regulation, policy, or finding of the United States with regard to national or international trade of fish, wildlife, or plants in effect on January 19, 2025. The bill would make these provisions inoperative on December 31, 2031, and would repeal them on January 1, 2032.

AB 1425

(Arambula D) San Joaquin River Parkway: pit dewatering.

Status: 04/01/2025 - Re-referred to Com. on NAT. RES.

Summary: The Surface Mining and Reclamation Act of 1975 prohibits a person, with exceptions, from conducting surface mining operations unless, among other things, a permit is obtained from, a specified reclamation plan is submitted to and approved by, and financial assurances for reclamation have been approved by the lead agency for the operation of the surface mining operation. This bill would prohibit pit dewatering, as defined, in areas with subsurface river flow or groundwater levels shallower than 50 feet below ground anywhere within the San Joaquin River Parkway, as defined.

AB 1426

(Kalra D) Diablo Range Conservation Program.

Status: 03/11/2025 - Re-referred to Com. on W. P., & W.

Summary: The Wildlife Conservation Law of 1947 establishes the Wildlife Conservation Board within the Department of Fish and Wildlife to investigate, study, and determine what areas within the state are most essential and suitable for wildlife production and preservation, among other things. Under existing law, the board administers various habitat conservation programs. This bill would require the board to establish and administer, through the Department of Fish and Wildlife, the Diablo Range Conservation Program and, pursuant to the program, to approve projects to acquire, preserve, restore, and enhance habitat within the Diablo Range, as defined, consistent with conservation strategies approved by the department. The bill would authorize the board to establish an ad hoc advisory committee, as specified. The bill would authorize the board to provide grants to local public agencies, nonprofit organizations, and tribes to be used for various purposes, including the acquisition, restoration, enhancement, and maintenance of fish and wildlife habitat and other natural resources within and adjacent to the Diablo Range.

AB 1456

(Bryan D) California Environmental Quality Act: vegetation fuel management project exemption.

Status: 03/13/2025 - Referred to Com. on NAT. RES.

Summary: The California Environmental Quality Act (CEQA) requires a lead agency, as defined, to prepare, or cause to be prepared, and certify the completion of an environmental impact report on a project that it proposes to carry out or approve that may have a significant effect on the environment or to adopt a negative declaration if it finds that the project will not have that effect. CEQA also requires a lead agency to prepare a mitigated negative declaration for a project that may have a significant effect on the environment if revisions in the project would avoid or mitigate that effect and there is no substantial evidence that the project, as revised, would have a significant effect on the environment. This bill would exempt from CEQA a vegetation fuel management project, as defined, undertaken or funded by a public agency, or the adoption of an ordinance requiring the implementation of a vegetation fuel management project. The bill would require a lead agency that determines to carry out or approve an activity that is within the exemption to file a notice of exemption with the Office of Land Use and Climate Innovation, as specified.

AB 1520

(Committee on Water, Parks, and Wildlife D) Public resources: conservation.

Status: 03/24/2025 - Referred to Com. on W. P., & W.

Summary: Current law prohibits a conservation bank, mitigation bank, or conservation and mitigation bank from being operative, vested, or final unless the Department of Fish and Wildlife has approved the bank in writing and, if applicable, a conservation easement has been recorded on the site. Current law requires a person interested in establishing any bank with the department to submit a bank prospectus to the department, as specified, and if the department determines the bank prospectus is acceptable, allows the person to submit a bank agreement package that, among other things, is required to contain estimates of financial assurances and proposed forms of security, as specified. This bill would authorize performance bonds to be proposed forms of security for the above purposes.

SB 70

(Seyarto R) Public contracts: Small Business Procurement and Contract Act.

Status: 04/07/2025 - April 7 hearing: Placed on APPR. suspense file.

Summary: The Small Business Procurement and Contract Act allows California state agencies, including the California State University, to directly award contracts for goods, services, or IT to certified small businesses, microbusinesses, and disabled veteran business enterprises without needing competitive bidding, as long as the contract value is between \$5,000 and \$250,000. This bill would increase this maximum contract value to \$350,000.

SB 73

(Cervantes D) California Environmental Quality Act: exemptions

Status: 03/13/2025 - March 19 set for second hearing canceled at the request of author.

Summary: The California Environmental Quality Act (CEQA) requires preparation of an Environmental Impact Report (EIR) or a negative declaration for projects with potential significant environmental effects. Certain projects, such as residential and mixed-use developments in transit priority areas, are exempt if they align with an existing specific plan with a certified EIR. This bill would expand exemptions to projects in areas of very low vehicle travel and mandates they follow specific planning guidelines, including development on previously used or qualified vacant sites. It also changes rules for exemptions related to agricultural employee housing, affordable housing, and infill residential projects, potentially allowing these within state conservancy boundaries and adjusting project size and location criteria. Additionally, exemptions for sustainable transit priority projects located in low vehicle travel areas are revised, requiring previous development or specific vacant site criteria. Lead agencies must file notices of exemption for qualifying projects, imposing additional local program requirements.

SB 247

(Smallwood-Cuevas D) State agency contracts: bid preference: equity metrics.

Status: 04/02/2025 - Re-referred to Com. on G.O.

Summary: Current law establishes bid preferences and participation goals in public contracting for certain types of bidders. The Small Business Procurement and Contract Act establishes a minimum goal of 25% procurement participation for small businesses, including microbusinesses, in the provision of goods, information technology, and services to the state, and in the construction of state facilities. The Small Business Procurement and Contract Act requires that state agencies awarding contracts for goods, information technology, services, and construction give 5% bid preferences, as specified, to small business and microbusiness bidders. The California Disabled Veteran Business Enterprise Program requires state departments that award contracts to establish 3% participation goals for certain types of contracts for certified disabled veteran business enterprises, as defined. This bill would require an awarding department, defined to include a state agency or department, to provide a bid preference of 10% in the award of contracts to contractors that set equity metrics, as prescribed. The bill would prohibit awarding a preference to a noncompliant bidder and would also prohibit the preference from being used to achieve any applicable minimum requirements.

SB 369

(Padilla D) Salton Sea: restoration projects: skilled and trained workforce.

Status: 04/04/2025 – Set for hearing April 21.

Summary: Current law requires the Secretary of the Natural Resources Agency, in consultation and coordination with the Salton Sea Authority, to lead Salton Sea restoration efforts. Current law, to the extent that funding is appropriated to the Department of Fish and Wildlife for Salton Sea restoration activities, authorizes the Department of Water Resources, in coordination and under agreement with the Department of Fish and Wildlife, to undertake certain restoration efforts. This bill would require, except as provided, specified state agencies undertaking a Salton Sea restoration project to obtain, as part of a contract entered into on or after January 1, 2026, an enforceable commitment that every bidder, contractor, subcontractor, or other entity at every tier, as defined, shall use a skilled and trained workforce, as provided, to perform all work that falls within an apprenticeship occupation in the building and construction trades.

SB 375

(Grove R) Wildfire prevention activities: Endangered Species Act: California Environmental Quality Act: California Coastal Act of 1973

Status: 04/03/2025 - April 8 set for second hearing canceled at the request of author.

Summary: Would authorize a city, county, city and county, special district, or other local agency to submit to the Department of Fish and Wildlife a wildfire preparedness plan to conduct wildfire preparedness activities on land designated as a fire hazard severity zone, as defined, that minimizes impacts to wildlife and habitat for candidate, threatened, and endangered species. The bill would require the wildfire preparedness plan to include, among other things, a brief description of the planned wildfire preparedness activities, the approximate dates for the activities, and a description of the candidate, endangered, and threatened species within the plan area. The bill would require the department, if sufficient information is included in the wildfire preparedness plan for the department to determine if an incidental take permit is required, to notify the local agency within 90 days of receipt of the wildfire preparedness plan if an incidental take permit or other permit is needed, or if there are other considerations, exemptions, or streamlined pathways that the wildfire preparedness activities qualify for, including, but not limited to, the State Board of Forestry and Fire Protection's California Vegetation Treatment Program. The bill would require the department to provide the local agency, in its notification, with guidance that includes, among other things, a description of the candidate, endangered, and threatened species within the plan area and measures to avoid, minimize, and fully mitigate the take of the candidate, threatened, and endangered species, as provided. The bill would require the department, on or before July 1, 2026, to make a standard wildfire preparedness plan submission form publicly available on its internet website. The bill also would require the department, commencing January 1, 2027, to annually post on its internet website a summary of the wildfire preparedness plans submitted and include specified information in that summary.

SB 427

(Blakespear D) Habitat Conservation Fund.

Status: 03/24/2025 - Set for hearing April 8.

Summary: The California Wildlife Protection Act of 1990 requires the Controller, until June 30, 2020, to annually transfer \$30,000,000 from the General Fund to the Habitat Conservation Fund, less any amount transferred to the Habitat Conservation Fund from specified accounts and funds. The act, until July 1, 2020, continuously appropriates specified amounts from the Habitat Conservation Fund to the Department of Parks and Recreation, the State Coastal Conservancy, the Santa Monica Mountains Conservancy, and the California Tahoe Conservancy, and continuously appropriates the balance of the fund to the Wildlife Conservation Board. Chapter 31 of the Statutes of 2019 requires the Controller to continue to annually transfer \$30,000,000 from the General Fund, less any amount transferred to the Habitat Conservation Fund from specified accounts and funds, to the Habitat Conservation Fund until June 30, 2030, and continuously appropriates that amount on an annual basis in the same proportions to the specified entities until July 1, 2030. This bill would require the Controller to continue to annually transfer \$30,000,000 from the General Fund, less any amount transferred to the Habitat Conservation Fund from specified accounts and funds, to the Habitat Conservation Fund indefinitely, and would continuously appropriate that amount on an annual basis in the same proportions to the specified entities described above, indefinitely.

SB 487

(Grayson D) Workers' compensation.

Status: 04/02/2025 - Re-referred to Com. on L., P.E. & R.

Summary: Current law establishes a workers' compensation system, administered by the Administrative Director of the Division of Workers' Compensation, to compensate an employee for injuries sustained in the course of employment. Existing law requires an employer to provide all medical services reasonably required to cure or relieve the injured worker from the effects of the injury. Existing law establishes a Workers' Compensation Appeals Board and sets forth various proceedings that are required to be brought forth before the board. This bill would make these provisions inapplicable to employees that are peace officers, as defined, and firefighters.

SB 542

(Limon D) Oil spill prevention: administrator for oil spill response: duties.

Status: 04/04/2025 – Set for hearing April 22.

Summary: Under current law, the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, there is an administrator for oil spill response. Under this act, the owner or operator of a facility where a spill could impact waters of the state shall apply for and obtain a certificate of financial responsibility issued by the administrator for, among other things, the facility or oil to be handled. This bill would require there to be an unspecified public process before the administrator issues the certificate of financial responsibility.

SB 556

(Hurtado D) Habitat enhancement and restoration: floodplains.

Status: 03/28/2025 - From committee with author's amendments. Read second time and amended. Re-referred to Com. on N.R. & W.

Summary: The Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024, approved by the voters as Proposition 4 at the November 5, 2024, statewide general election, authorized the issuance of bonds in the amount of \$10,000,000,000 pursuant to the State General Obligation Bond Law to finance projects for safe drinking water, drought, flood, and water resilience, wildfire and forest resilience, coastal resilience, extreme heat mitigation, biodiversity and nature-based climate solutions, climate-smart, sustainable, and resilient farms, ranches, and working lands, park creation and outdoor access, and clean air programs. The act makes available, upon appropriation by the Legislature, \$870,000,000 to the Wildlife Conservation Board for grant programs to protect and enhance fish and wildlife resources and habitat and achieve the state's biodiversity, public access, and conservation goals. This bill would, from the above-described bond funds made available to the board, appropriate \$43,000,000 to the board to support projects in the Counties of Kern, Kings, and Tulare for floodplain acquisition, habitat restoration, and associated conservation on floodplains, as provided.

SB 609

(Laird D) Fish: commercial fishing.

Status: 04/01/2025 - Set for hearing April 8.

Summary: Current law requires the receipts, reports, or other records filed with the department pursuant to specified laws, and the information contained therein, to, except as provided, be confidential and to not be public records, as specified. This bill would revise and recast the above-described provision to additionally require certain landing receipts and records of fishing activities to be confidential and to not be public records, except for fish business identification numbers, fish business names, commercial fishing license numbers, commercial fisher names, vessel registration identification numbers, and vessel names, as provided.

SB 718

(Dahle R) Hunting and sport fishing licenses: reduced fees.

Status: 04/04/2025 - Set for hearing April 22.

Summary: Current law requires the Department of Fish and Wildlife to implement and administer various wildlife protection and habitat conservation programs and to enforce the state's hunting and fishing laws. Existing law sets the fees for those licenses at specified rates and requires those fees to be adjusted annually for inflation. Current law requires the department to issue reduced fee hunting and sport fishing licenses to specified individuals as provided. This bill would require the department to issue a reduced fee hunting license to a qualified recipient who has not been convicted of a violation of the Fish and Game Code and has provided adequate documentation to the department, as specified.

SB 765

(Niello R) State snake.

Status: 03/28/2025 - Set for hearing April 8.

Summary: Existing law establishes the state flag and the state's emblems, including, among other things, the poppy as the official state flower, the California redwood as the official state tree, and the California desert tortoise as the official state reptile. This bill would establish the giant garter snake (*Thamnophis gigas*) as the official state snake.

SB 818

(Alvarado-Gil R) Mountain Lions: pilot program: permitted houndspersons.

Status: 04/04/2025 - Set for hearing April 22.

Summary: Proposition 117, an initiative measure approved by the voters at the June 5, 1990, statewide primary election, enacted the California Wildlife Protection Act of 1990. The act establishes that the mountain lion is a specially protected mammal under the laws of this state, and makes it unlawful to take, injure, possess, transport, import, or sell any mountain lion or any part or product thereof. The act authorizes the Department of Fish and Wildlife, or a specified appropriate local agency authorized by the department, to remove or take any mountain lion that is perceived to be an imminent threat to public health or safety or that is perceived by the department to be an imminent threat to the survival of certain sheep species. This bill would require the department to, by January 1, 2027, establish a pilot program known as "Tree and Free" in the County of El Dorado in order to collect data on the efficacy of authorizing permitted private houndspersons to proactively haze mountain lions deemed to be a potential threat to public safety, livestock, or other domestic animal by the department, animal damage control officer, or local enforcement agency. The bill would require the program to be operative for 5 years from the date of commencement and, once concluded, would require the department to, no later than January 1, 2033, provide a report to the Legislature and the Fish and Game Commission on the efficacy the program and feasibility on expanding the program to other areas, as specified.

SB 839

(Laird D) Oil spills: fishing: water closure: grants: liability.

Status: 04/03/2025 - Set for hearing April 8.

Summary: Existing law requires the Director of Fish and Wildlife, within 24 hours of notification of a spill or discharge, to close certain waters to the take of all fish and shellfish. Existing law provides that closure is not required if the Office of Environmental Health Hazard Assessment (OEHHA) finds, within 24 hours of the notification, that a public health threat does not or is not likely to exist. Existing law requires the director to seek full reimbursement from the responsible parties for the spill or discharge for all reasonable costs incurred by the department in carrying out these provisions. This bill would revise those provisions by, among other things, authorizing, instead of requiring, after a notification of a spill or discharge the director to close certain waters to the take of all fish or shellfish or to otherwise restrict the take and possession of all fish or shellfish in those waters. The bill would require closure if OEHHA finds that a public health threat exists or is likely to exist, and would require the director, in determining the need for a closure, to consult with OEHHA within 24 hours after a notification of a spill or discharge regarding the likelihood of a public health threat, if specified conditions

are met. The bill would also authorize OEHHA to seek full reimbursement for all reasonable costs it incurs. The bill would make it unlawful to take any fish or shellfish from any waters closed pursuant to these provisions or to otherwise violate any restriction imposed pursuant to these provisions. Existing law authorizes the administrator for oil spill response to offer grants to a local government, Native American tribe, or other public entity with jurisdiction over or directly adjacent to waters of the state to provide oil spill response equipment to be deployed by a certified local spill response manager, as provided. This bill would provide that a federally recognized tribe, instead of a Native American tribe, is eligible to receive those grants. Existing law requires the administrator for oil spill response, taking into consideration the California oil spill contingency plan, to promulgate regulations regarding the adequacy of oil spill elements of area plans adopted pursuant to specified existing law. Existing law authorizes the administrator to offer, to a unified program agency with jurisdiction over or directly adjacent to waters of the state, a grant to complete, update, or revise an oil spill element of the area plan. Existing law establishes the Environmental Enhancement Grant Program and requires grants to be awarded to nonprofit organizations, cities, counties, cities and counties, districts, state agencies, and departments. This bill would provide that a federally recognized tribe is also eligible to receive the above-described grants. Existing law makes a responsible party absolutely liable without regard to fault for any damages incurred by any injured person that arise out of, or are caused by, a spill, with specified, exemptions including the discharge or leaking of oil or natural gas from a private pleasure boat or vessel. This bill would remove the discharge or leaking of oil or natural gas from a private pleasure boat or vessel from those exemptions from liability.

SB 856

(Committee on Natural Resources and Water) Marine Invasive Species: biennial reports: semiannual updates.

Status: 04/04/2025 - Set for hearing April 22.

Summary: The Marine Invasive Species Act requires the State Lands Commission, in consultation with specific entities, to biennially submit to the Legislature a report that includes certain information, including, among other things, a summary of the information provided in the ballast water discharge report forms submitted to the commission, as provided. This bill would require the biennial report submitted to the Legislature to instead be submitted triennially and would require that report to instead include a summary of the information provided in the ballast water management report forms submitted to the commission, as provided.

For more information call:

Clark Blanchard, CDFW Deputy Director at (916) 591-0140
Erika Fiske-Sanders, CDFW Legislative Representative at (916) 539-2912

You can also find legislative information on the web at <http://leginfo.legislature.ca.gov/> and follow the prompts from the 'bill information' link.

Memorandum

Date: April 7, 2025

To: Melissa Miller-Henson
Executive Director
Fish and Game Commission

From: Charlton H. Bonham
Director

Subject: **April 2025 Request for Changes to the Fish and Game Commission's Timetable for Anticipated Regulatory Actions**

The Department of Fish and Wildlife (Department) requests the following schedule changes to the Fish and Game Commission's (Commission's) 2025 regulatory timetable for amendments to Title 14, California Code of Regulations (CCR):

1. Please add a new rulemaking, "Striped Bass Harvest Size Limits" amending sections 5.75 and 27.85, requesting to authorize notice at the June 2025 meeting, discussion at the August meeting, and adoption at the October 2025 meeting. This rulemaking aims to address the intent of the Commission's petition 2022-12 submitted by the NorCal Guides and Sportsmen's Association to establish a minimum length limit and a maximum size for sport fish take of striped bass, as discussed at [past Wildlife Resources Committee meetings](#).
2. Please add a certificate of compliance (standard rulemaking action) for the existing emergency regulation, "Golden Mussel Response – Restricted Species" amending Section 671. This regulation would be slated for notice for the August 2025 meeting and Discussion/ Adoption at the October 2025 meeting. This rulemaking aims to make the addition of golden mussel to the Restricted Species List indefinite, and will add to Section 671 in this standard rulemaking other species, such as the European green crab from the [Commission's Perpetual Rulemaking Timetable](#), "Future Rulemakings: Schedule to be Determined" items, from petition 2017-006.
3. Please add a new rulemaking, "Big Game Preference Points" amending Section 708.14, requesting to authorize notice at the August 2025 meeting, discussion at the October meeting, and adoption at the December 2025 meeting. This rulemaking aims to address concerns regarding administration in preference point reinstatement and refunds for big game hunt zones when public land closures occur due to wildfires.

Melissa Miller-Henson, Executive Director
Fish and Game Commission
April 7, 2025
Page 2

If you have any questions or need additional information, please contact Regulations Unit Manager, Ona Alminas, at (916) 902-9222 or Regulations@wildlife.ca.gov.

cc: Chad Dibble, Deputy Director
Wildlife and Fisheries Division

Robert Pelzman, Assistant Chief
Law Enforcement Division

Scott Gardner, Branch Chief
Wildlife Branch

Jay Rowan, Branch Chief
Fisheries Branch

Ona Alminas, Env. Program Manager
Regulations Unit
Regulations@wildlife.ca.gov

David Thesell, Deputy Executive Director
Fish and Game Commission

Dixie Van Allen, Program Manager
Fish and Game Commission
fgc@fgc.ca.gov

California Fish and Game Commission: Perpetual Timetable for Anticipated Regulatory Actions

April 11, 2025

Proposed changes are shown in blue ~~strikeout~~/underline

Subject of Rulemaking	Title 14 Section(s)	MRC Sacramento March 13, 2025	TC Sacramento April 15, 2025	FGC Sacramento April 16, 2025	FGC Sacramento April 17, 2025	FGC Teleconference May 14, 2025	WRC Sacramento May 15, 2025	FGC Sacramento June 11, 2025	FGC Sacramento June 12, 2025	MRC Sacramento July 17, 2025	TC Sacramento August 12, 2025	FGC Sacramento August 13, 2025	FGC Sacramento August 14, 2025	WRC Sacramento September 11, 2025	FGC Sacramento October 8, 2025	FGC Sacramento October 9, 2025	MRC Sacramento November 6, 2025	TC Sacramento December 9, 2025	FGC Sacramento December 10, 2025	FGC Sacramento December 11, 2025	WRC Ontario / San Bernardino January 13, 2026	FGC Sacramento February 11, 2026	FGC Sacramento February 12, 2026
Central Valley Sport Fishing (Annual)	7.40(b)(4), (43), (66), (80)			D		A				E 7/15													
Klamath River Basin Sport Fishing (Annual)	7.40(b)(50)			D		A				E 7/15													
Waterfowl Hunting, 2025-26 (Annual)	502			A						E 7/1													
Commercial California Halibut and White Seabass Set Gill Nets	174.1							Disapproved by OAL on 2/19. Re-submittal pending.															
Recreational Take of Barred Sand Bass	28.30				A			E 6/1															
Commercial Red Sea Urchin ²	120.7				A					E 7/1													
White Sturgeon Sport Fishing During CESA Candidacy Emergency (First 90-Day Extension)	5.78, 27.93	E 3/5						EE 6/3															
White Sturgeon Sport Fishing During CESA Candidacy Emergency (Second 90-Day Extension)	5.78, 27.93					A		E 6/3						EE 9/1									
<u>White Sturgeon Sport Fishing 2084</u>	5.78, 5.79, 5.80, 27.90, 27.92, 27.93			D				A	<u>A</u>					E 9/1									
Adding Golden Mussel to the List of Restricted Species Emergency	671									EE 6/17													
Adding Golden Mussel to the List of Restricted Species Emergency (First 90-Day Extension)	671			A						E 6/17					EE 9/15								
Adding Golden Mussel to the List of Restricted Species Emergency (Second 90-Day Extension)	671							A	<u>A</u>						E 9/15						EE 12/14		
Commercial Harvest of Sea Palm; Kelp and Other Aquatic Plants Harvest Reporting	165, 705.1				D/A																E 1/1		
Commercial Coonstripe Shrimp Fishery Emergency	180.15						E 5/1									EE 10/28							
<u>Market Squid Fishery Management Plan Amendment</u>	53.00, 53.01, 53.02, 53.03				N			<u>D</u>	<u>D</u>				A								E 1/1		
<u>Commercial Take of Market Squid</u>	149				N			<u>D</u>	<u>D</u>				A								E 1/1		
<u>Recreational Crab Fishing Gear and Commercial Passenger Fishing Vessel Trap Validation</u>	29.80, 29.85, 190, 195, 701				N			<u>D</u>	<u>D</u>				A								E 1/1		
<u>Falconry</u>	670			N		D		A	<u>A</u>						E 10/1								
<u>Striped Bass Harvest Size Limits</u>	<u>5.75, 27.85</u>								<u>N</u>			<u>D</u>			<u>A</u>								
<u>Golden Mussel Response - Restricted Species</u>	<u>671</u>												<u>N</u>		<u>D/A</u>								
<u>Big Game Preference Points</u>	<u>708</u>											<u>N</u>			<u>D</u>			<u>A</u>					
Big Game Hunting, 2025-26 Seasons, and Chronic Wasting Disease Testing	360, 362, 363, 364, 364.1, 708.5			A						E 7/1													

Future Rulemakings: Schedule to be Determined

Subject of Rulemaking	Title 14 Section(s)	MRC Sacramento March 13, 2025	TC Sacramento April 15, 2025	FGC Sacramento April 16, 2025	FGC Sacramento April 17, 2025	FGC Teleconference May 14, 2025	WRC Sacramento May 15, 2025	FGC Sacramento June 11, 2025	FGC Sacramento June 12, 2025	MRC Sacramento July 17, 2025	TC Sacramento August 12, 2025	FGC Sacramento August 13, 2025	FGC Sacramento August 14, 2025	WRC Sacramento September 11, 2025	FGC Sacramento October 8, 2025	FGC Sacramento October 9, 2025	MRC Sacramento November 6, 2025	TC Sacramento December 9, 2025	FGC Sacramento December 10, 2025	FGC Sacramento December 11, 2025	WRC Ontario / San Bernardino January 13, 2026	FGC Sacramento February 11, 2026	FGC Sacramento February 12, 2026
Santa Cruz Harbor Salmon Fishing (CFGC Petition 2016-018)	TBD																						
<u>European Green Crab (CFGC Petition 2017-096)</u>	<u>TBD</u>																						
Possess Game / Process Into Food	TBD																						
American Zoological Association / Zoo and Aquarium Association	671.1																						
Night Hunting in Gray Wolf Range (CFGC Petition 2015-010)	474																						
Donation of Fish to Non-Profit Organizations ¹	TBD																						
Electronic Report Cards	1.74, 5.79, 5.80, 5.81, 5.87, 5.88																						
Shellfish Aquaculture Best Management Practices	TBD																						
Ridgeback Prawn Incidental Take Allowance	120(e)																						
<u>Marine Protected Areas (MPAs)³</u>	<u>632</u>																						
<u>Lands Pass - Hope Valley Wildlife Area⁴</u>	<u>TBD</u>																						

KEY

CFGC = California Fish and Game Commission MRC = CFGC Marine Resources Committee WRC = CFGC Wildlife Resources Committee TC = CFGC Tribal Committee OAL = Office of Administrative Law

EM = Emergency EE = **Emergency Expires** E = Anticipated Effective Date (RED "X" = **expedited OAL review**) EUF = Effective Upon Filing w/ Secretary of State

N = Notice Hearing D = Discussion Hearing A = Adoption Hearing V = Committee Vetting R = Committee Recommendation 1 = Considers CFGC Petition 2023-10 2 = Considers CFGC Petition 2023-04

3 = Considers MPA Petitions/sub-actions: 2023-22MPA (sub-actions 1, 2, 4, 6); 2023-25MPA (sub-actions 1, 3); 2023-26MPA (sub-actions 2, 3, 4); and 2023-31MPA (sub-actions 1, 2) 4 = Considers CFGC Petition 2018-016(a)

California Fish and Game Commission
Potential Agenda Items for the May and June 2025 Commission meetings
April 13, 2025

The next Commission meetings are scheduled for May 14, 2025 via teleconference and June 11-12, 2025 in Sacramento, with Zoom and phone options for the public. This document identifies potential agenda items for each meeting, including items to be received from staff and the California Department of Fish and Wildlife (Department). For two-day meetings, marine-related items will be heard on the first day and wildlife-related items on the second day, as approved by the Commission at its February 2025 meeting.

Wednesday, May 14

1. Discussion hearing: Falconry
2. Adoption hearing: Central Valley sport fishing
3. Adoption hearing: Klamath River Basin sport fishing
4. Adoption hearing: White sturgeon emergency regulations, second 90-day extension
5. General public comment for items not on the agenda

Wednesday, June 11: Marine-related and Administrative items

1. General public comment for items not on the agenda
2. Discussion hearing: Market squid fishery management plan amendments
3. Discussion hearing: Commercial take of market squid regulations
4. Discussion hearing: Recreational crab fishing gear and commercial passenger fishing vessel trap validation regulations
5. Application for a restricted species permit amendment (*if staff recommendation is approved during today's meeting*)
6. Commission policies review: *Naming Installations Policy*
7. Commission justice, equity, diversity and inclusion plan update
8. Marine petitions for regulation change¹
9. Marine non-regulatory requests from previous meetings¹
10. Commission committee reports (Marine Resources Committee and Tribal Committee) and Department report (Marine Region)
11. Executive (closed) session

Thursday, June 12: Wildlife- and Inland Fisheries-Related and Administrative Items

12. Potentially approve initial, annual, and five-year private lands wildlife habitat enhancement and management plans and licenses
13. Potentially approve proposed projects for the Duck Stamp Dedicated Account funds in Fiscal Year 2025-26

14. Commission executive director report and Department reports (director and Law Enforcement Division)
15. Announce the recipient of the Commission's annual Wildlife Prosecutor of the Year award
16. Determine whether listing quino checkerspot butterfly (*Euphydryas editha quino*) as endangered under the California Endangered Species Act is warranted
17. Adoption hearing: White sturgeon sport fishing 2084 regular rulemaking regulations
18. Adoption hearing: Golden mussel emergency regulations, second 90-day extension
19. Adoption hearing: Falconry regulations
20. Discuss and potentially approve: Draft western Joshua tree conservation plan
21. Wildlife and inland fisheries petitions for regulation change¹
22. Wildlife and inland fisheries non-regulatory requests from previous meetings¹
23. Commission committee reports (Wildlife Resources Committee) and Department reports (Wildlife and Fisheries Division, and Ecosystem Conservation Division)
24. Administrative items (legislative report, rulemaking timetable updates, future meetings, and new business)
25. General public comment for items not on the agenda

Expected Reports or Other Significant Documents to be Received

- Department's one-year status review report for Temblor legless lizard (*Anniella alexanderae*)
- Department's five-year status review report for Bogg's Lake hedge-hyssop (*Gratiola heterosepala*)

¹ Staff is authorized to remove this agenda item if there are no actionable, referred, or new items, in which case any new regulation change petitions or non-regulatory requests delivered at the meeting will be received under the general public comment agenda items on Wednesday or Thursday.